TRI-STATE GENERATION AND TRANSMISSION ASSOCIATION, INC.
HEADQUARTERS: P.O. BOX 33695 DENVER, COLORADO 80233-0695 303-452-6111

November 23, 2020

Mr. Zach Trujillo
Environmental Protection Specialist
Colorado Division of Reclamation, Mining & Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

RE: Colowyo Coal Company L.P.
Permit No. C-1981-019
Minor Revision No. 226
Mule Deer and Elk Mitigation

Dear Mr. Trujillo,

Tri-State Generation and Transmission Association Inc. (Tri-State), is the parent company to Axial Basin Coal Company, which is the general partner to Colowyo Coal Company L.P. (Colowyo). Therefore, Tri-State on behalf of Colowyo is submitting minor revision 226 (MR-226) to Permit No. C-1981-019.

Section 2.05.6(2) in Volume 15 of Colowyo's permit to mine contains a list of wildlife mitigation measures specific to mule deer and elk that were included during the permitting process for permit revisions 03 and 04. MR-226 is updating the mule deer and elk mitigation measures that have been implemented, and removes items that Colowyo included that are outside of the mine permit boundary.

Several wildlife mitigation measures for the Collom Haul Road including speed limits on the Collom Haul Road at critical wildlife crossing locations, supplemental lightening at these locations, and road shoulder widths have all been implemented as required when the Collom Haul Road was constructed. Therefore, these mitigation measures under MR-226 have been moved from the wildlife mitigation measures in Section 2.05.6(2) and documented as completed in Section 4.03.1 Haul Roads.

Other agreements that are noted in the permit, but are outside of the permit boundary, such as seeding of the Gossard wheat fields (area north of the Gossard Loadout and Colowyo's private land), and wildlife habitat projects on Colowyo's private lands in the Axial Basin, and it's Morgan Creek Ranching for Wildlife are being removed under MR-226. Several seedings of the Gossard wheat fields have taken place over a few years, and natural recruitment from adjacent non-farmed areas is occurring. The area is heavily utilized by pronghorn year around, occasionally by Greater Sage Grouse, and seasonally by elk and mule deer. Ongoing work with outside entities for habitat enhancement activities in the Axial Basin on Colowyo's private land holdings, and Colowyo's Morgan Creek Ranching for Wildlife operation continue to occur as projects arise and as Colowyo deems appropriate as a private landowner.

Included in this minor revision is a change of index sheet to ease incorporation of this minor revision into the permit document. If you should have any additional questions or concerns, please feel free to contact Tony Tennyson at (970) 824-1232 at your convenience.

Sincerely,

DocuSigned by:
Daniel Casiraro
B70D69F114324DE...

Daniel J. Casiraro
Senior Manager
Environmental Services

DJC:TT:der

Enclosure

cc: Jennifer Maiolo (BLM-LSFO)
Chris Gilbreath (via email)
Tony Tennyson (via email)
Angela Aalbers (via email)
File: C. F. 1.1.1.207 - G471-11.3(21)d

CHANGE SHEET FOR PERMIT REVISIONS, TECHNICAL REVISION, AND MINOR REVISIONS

Mine Company Name: **Colowyo Coal Company**
Permit Number: **C-1981-019**
Date: **November 17, 2020**
Revision Description: **MR-226 Wildlife Mitigation**

Volume Number	Page, Map or other Permit Entry to be REMOVED		Page, Map or other Permit Entry to be ADDED		Description of Change
1					No Change
2A					No Change
2B					No Change
2C					No Change
2D					No Change
2E					No Change
3					No Change
4					No Change
5A					No Change
5B					No Change
6					No Change
7					No Change
8					No Change
9					No Change
10					No Change
12					No Change
13					No Change
14					No Change
15	Rule 2 Page 107 through Rule 2 Page 112 (6 pages)		Rule 2 Page 107 to Rule 2 Page 112 (6 pages)		Wildlife mitigation measures have been updated which caused a pagination shift.
15	Rule 4 Page 2 through Rule 4 Page 7 (6 pages)		Rule 4 Page 2 through Rule 4 Page 7 (6 pages)		Section 4.03.1 has been updated with wildlife mitigation measures that have been installed which caused a pagination shift.
16					No Change
15					No Change
17					No Change
18A					No Change

CHANGE SHEET FOR PERMIT REVISIONS, TECHNICAL REVISION, AND MINOR REVISIONS

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Volume Number	Page, Map or other Permit Entry to be REMOVED		Page, Map or other Permit Entry to be ADDED		Description of Change
18B					No Change
18C					No Change
18D					No Change
19					No Change
20					No Change
21					No Change
22					No Change

Sagegrouse Mitigation

During permitting activites for the South Taylor Mining area, regulatory developments convinced Colowyo, CPW and the Colorado Division of Reclamation, Mining and Safety to target sagegrouse brood rearing habitat for future reclamation planning efforts and overall improvement in shrub establishment on reclaimed lands at Colowyo. The result of these efforts rewrote the existing reclamation plan and performance criteria for bond release This plan was developed specifically to create sagegrouse brood rearing habitat, while promoting improved shrub establishment on all reclamation areas. This effort and focus will continue into the future with Collom expansion area reclamation, as the reclamation plan developed for Collom mirrors the principles and innovations applied to the existing mining area.

As stated previously, Colowyo will focus on sagebrush steppe establishment as a function of sagegrouse habitat creation. Sagebrush oblitgate species will also benefit from these efforts as a result. Again, please refer to Map 44 for the location of (potentially impacted) pre-mine sagegrouse lek areas and stockponds that will add value for sagegrouse habitat.

The reclamation plan focus, reclamation seed mixes, bond release criteria, interim revegetation monitoring program and pre-planning of disturbance to avoidance high value habitat (leks) where practical, was initiated in large part to specificically mitigate potential impacts to area sagegrouse populations from mining activity. Consideration was given to all endemic wildlife populations during the creation of the reclamation plan and seed mixes in order to balance multiple uses among different wildlife species, not only on the sagebrush steppe areas, but areas targeted for grassland as well. Justification for the use of specific plant materials for the sagebrush steppe and grassland areas may be found under Section 2.05.4.

Electric power lines located in the permit area will be constructed in accordance with the requirements of Section 4.18 to minimize potential electrical hazards to large raptors.

Vehicle use within the Collom area will be limited to the active mining area and the various support facilities. Off-road vehicle use is kept to a minimum and is usually only authorized for surveying, environmental data collection and monitoring, security, etc. Travel by foot, which causes much more disturbance to wildlife than vehicle traffic, is highly unlikely outside active mining areas.

With regard to sage grouse populations, Colowyo believes that the revegetation metrics presented within this submittal address the concern for negative impacts to area populations and brooding habitat. It is anticipated that sage grouse use of reclaimed lands will return to pre-mining levels, or perhaps return to elevated levels as has been experienced at certain Wyoming mining operations.

Additional Mitigation Measures Recommended By CDOW

During the PR-03 permitting process, Colowyo provided the Division with copies of the communications between CPW and Colowyo that identified additional mitigation strategies Colowyo will implemented in order to further offset disturbance in the Collom Expansion Area. The Division received a letter from CPW dated February 15, 2011 regarding wildlife mitigation suggestions based on the disturbance area in the Collom Expansion Area. Colowyo management staff met with CPW staff on April 29, 2011 to discuss the specific mitigation issues raised by CPW's February 15, 2011 letter to the Division. Colowyo subsequently drafted a letter to CPW on May 4, 2011 clarifying points of agreement and providing specific proposals for additional wildlife mitigation measures. CPW responded to Colowyo's May 4, 2011 letter on May 17, 2011 in a letter further refining their recommendations. Colowyo has agreed to accommodate and is specifically identifying the the following recommendations of Colowyo's May 4,

2011 letter to CPW and CPW May 17, 2011 letter to Colowyo that are not already incorporated/required by Colowyo's revised reclamation plan or other process or statute below:

Greater Sage Grouse:

- Colowyo has offered to evaluate current livestock grazing management practices and multiple stakeholder agreements in the Axial Basin and Morgan Creek Ranching for Wildlife areas for identification of additional opportunities to minimize impacts to and enhancement of habitat of Greater Sage Grouse in the area. Input from CDOW will be a helpful component of these evaluations.
- Colowyo will incorporate the utilization of marking flags on perimeter fences in the Collom Expansion area to minimize incidents of Greater Sage Grouse mortality through grouse/fence collisions. CPW provided a letter dated July 30, 2014 which outlines the locations that Colowyo will demarcate fences to minimize Greater Sage Grouse impacts. Please see Figure 2.05.6-3.
- Colowyo will treat NPDES discharge ponds for mosquitos to reduce the potential of West Nile Virus transmission to local grouse populations if this treatment is not specifically precluded by CDPHE regulation of Colowyo's discharge ponds.

During a series of meetings since the approval of PR-03 between CPW, BLM, USFWS, Tri-State, and Colowyo it was determined that there would potentially be direct impacts to approximately 2,133 acres of mapped Preliminary Priority Habitat (PPH) for Greater Sage Grouse (GSG) from the mining plan approved under PR-03. In addition to the direct impacts, consultation with CPW, BLM and USFWS biologists determined that indirect impacts would potentially occur up to 900 meters (2,953 feet) from the edge of disturbance. This distance was determined using several years of monitoring data from the Axial Basin where existing operations have been occurring and a number of years of recorded GSG locations near the existing mining operations obtained through radio telemetry by CPW in cooperation with Colowyo. It was also determined that mining of the Little Collom X Pit (approved under PR-03) would cause a significant impact GSG lek adjacent to the pit. Therefore, Colowyo agreed to relingquish mining of the Little Collom X Pit and redesigned the temporoary overburden spoil pile location to significantly reduce the potential impacts to GSG.

Based on the 900 meter distance, it was determined that there would be 2,180 acres of PPH potentially indirectly impacted. In total, there would be 4,313 acres of PPH potentially impacted both directly and indirectly by the mine plan disturbance under PR-04. To offset both the direct and indirect potential impacts to GSG PPH, Colowyo has agreed reduce the mining plan by not mining the Little Collom X Pit, redesign the temporaory spoil pile and relocate to create a larger buffer from an active GSG lek, and also to implement the following GSG mitigation measures:

- Colowyo will donate a total of 4,543 acres of Colowyo privately owned surface within PPH but outside of the permitted mine boundary in five non-contiguous parcels to CPW. This land will be managed by CPW for the preservation and maintenance of GSG habitat in the Axial Basin in perpetuity. The land donation will become effective and CPW would assume management of these areas prior to any land disturbance activities at the Collom Pit or temporary spoil pile area. A Land Donation Agreement will be signed between Tri-State/Colowyo and CPW, and will include details for the land donation along with a legal description of the area.
- Under the Land Donation Agreement with CPW, Colowyo will transfer all grazing and mineral rights held by Colowyo on those parcels to CPW, as well as the water rights to any stock watering structures located on those parcel
- Construct all sediment control structures outside of the GSG lekking and brook rearing seasons (March 15 – May 15 and May 15 to July 15, respectively.

- Colowyo will make a one-time cash donation of $150,000 to CPW to preserve and protect the GSG and to fund on-going research monitoring of the GSG.

Columbian Sharp-Tail Grouse:

- Mitigation efforts identified for Greater Sage Grouse will also benefit Columbian Sharp-Tail Grouse. No specific mitigation efforts have been requested by CPW beyond the efforts to be undertaken for Greater Sage Grouse, Mule Deer and Elk.

Mule Deer and Elk:

- Colowyo will incorporate CPW recommended guidance for wildlife friendly fencing when construcing new fences in the Collom Expansion Area.

2.05.6 (3)(a) Protection of the Hydrologic Balance

Surface Water

Surface water will be protected in the mining areas by stormwater management as described in Section 2.05.3(4) of this permit revision application and in the Stormwater Management Plan portion of the Stormwater Discharge Permit and as shown in Exhibit 7, Item 23. Protection includes the use of diversion ditches to route surface water around the mining impact areas.

Current surface water rights will not be impacted by mining operations at Collom Pit. There is no expected long-term measurable impact to the quantity of surface water in Collom Gulch, Little Collom Gulch, Jubb Creek, or any of their tributaries. Surface water amounts that will be used in mining operations will be within the water rights owned by Colowyo.

Surface water quality of the three creeks is calculated to only be marginally impacted by mining activities. This marginal impact, described in the Probable Hydrologic Consequences section (Section 2.05.6 (3)(b)(iii) below), will be due to meteoric water being captured in and evaporated from the mine pit during operations, and meteoric water contacting an increased surface area of soil in the vadose zone and thereby theoretically increasing the mass of dissolved solids entering shallow groundwater. These dissolved solids in shallow groundwater may eventually enter the surface water system, with a theoretical increase in dissolved solids in the surface water. This increase is calculated to be small enough to have no impact on the current or projected surface water uses in the Collom Gulch, Little Collom Gulch, and Jubb Creek drainages.

Groundwater

Groundwater in the vicinity of the Collom mining areas occurs in perched (unconfined) and confined water bearing zones of limited areal extent within bedrock of the Williams Fork Formation, the Trout Creek Sandstone (a bedrock aquifer of regional extent), and valley-fill aquifers as described in Section 2.04.7. The Williams Fork Formation water beaering zones have no beneficial use owing to their limited extent and minimal water production. Based on studies in the Collom area, the saturated water table/piezometric surface is at approximately 7150 feet. This level means that the area in and around the Collom Pit outline is under static hydrologic conditions with the water level at approximately 7150 feet. Due to this static condition, Colowyo may dewater this zone to allow mining of the coals below this elevation in the northern cut(s) of the pit.

The Trout Creek Sandstone is a sandstone unit underlying most of the permit area and extending across much of northwestern Colorado. It contains water of useable quantity and quality as demonstrated by

beneficial-use wells near the permit area. The Trout Creek Sandstone is stratigraphically several hundred feet below the rock units to be mined and is separated from those strata by low-permeability layers within the Williams Fork Formation, particularly the KM layer, a regionally-continuous clay layer (see Section 2.04.5 and 2.04.6). Additionally, the Trout Creek Sandstone was removed by erosion and structural uplifts north and south of the mining area and so is isolated from the regional perspective. Based on this information, mining is anticipated to have no impact on the Trout Creek Sandstone aquifer.

Groundwater in the shallow valley-fill aquifers of the drainages crossing the permit modification area is calculated to be marginally impacted by surface mining activities, as described in the Probable Hydrologic Consequences section.

There are no registered beneficial-use wells other than monitoring wells in the Colorado Division of Water Resources well database within at least one mile downgradient of the mining area (Map 11C). In Section 2.03.4, Identification of Interests, the legal or equitable owners of record of the property to be mined or affected by surface operations and facilities incidental thereto within the Collom permit expansion area are:

Colowyo Coal Company L.P.
State of Colorado
U.S. Bureau of Land Management

No other private individual or group owns or controls any land in the Collom permit expansion area. Thus, any well within the limits of the Collom permit expansion is controlled by Colowyo. This includes the Dudek and Sweeney wells. Table 2.04.7-44 and Map 11C reflect the location and ownership and control status of these wells.

2.05.6 (3)(b)(i & ii) Hydrologic Controls

Rule 2.05.6(3)(b)(iii) requires determination of probable hydrologic consequences for the mining operations. This rule indicates that these consequences must be defined for both the permit area and adjacent areas, for quantity and quality of surface water and groundwater. Baseline conditions must be established, and possible impacts from the activities must be anticipated.

Summary of Probable Hydrologic Consequences

An evaluation was made of potential hydrologic impacts of the Collom mine to determine if the potential impacts are likely to occur and if they would be significant. Based on the assessment of potential impacts, the probable hydrologic consequences of the Collom Project are:

- Two springs mapped within the pit footprint and facilities area will be eliminated by mining. Springs near the Collom pit might experience decreased flows during mining. Three additional springs located in Little Collom Gulch north of the mine and spoil footprint area may have reduced flows as a result of the mine dewatering activities. Significant impacts to other springs are not anticipated.
- Dewatering of the Collom pit is needed to achieve stable pit slopes for safe operating conditions and will cause a drawdown in bedrock groundwater levels in the vicinity of the pit. Groundwater levels are expected to recover after mining but may be at different levels than the pre-mining groundwater. It is unlikely that the groundwater level in the pit backfill will reach a high enough elevation to cause the discharge of spoil backfill groundwater at ground surface in Little Collom

Gulch. If this were to occur, it would not have a significant impact on the quantity or quality of surface and subsurface flow in Little Collom Gulch.

- The hydraulic conductivity within the backfilled pit is anticipated to be more uniform and higher than the hydraulic conductivity of the individual geologic units in the adjacent unmined areas. This will result in alternation of the bedrock groundwater flow gradient in the mine footprint area and the immediate area surrounding the footprint. In general, the higher permeability of the spoil backfill will result in a flatter groundwater gradient. Groundwater flow conditions in the areas north of the pit are expected to be similar to the pre-mining groundwater flow conditions after re-saturation of the spoil backfill.
- No other statistically significant changes to surface water and groundwater quality or quantity are anticipated.

The potential impacts that were evaluated and the resulting hydrologic consequences are discussed in the following subsections.

Potential Impacts to Springs and Seeps

Springs in the Colowyo Mine area result from three general sources: 1) typified by a relatively deep soil accumulation immediately upslope and shallow bedrock downslope of the point of discharge, 2) discharge within valley bottom deposits, and 3) from sheer bedrock faces on hillsides (CDM 1985b). The first two of these sources may mask or contribute to bedrock sources of the springs. The seeps and low volume springs flow generally in response to snowpack accumulation and subsequent melting resulting in seasonal flows.

The majority of the springs with bedrock sources appear to be contact springs. A contact spring results from the infiltration of water from the surface to a porous zone (such as sandstone) above a horizontal hydrologic barrier (such as shale) where the water preferentially flows along the contact to the exposure. This type of spring is common in areas where alternating sequences of lithologies exist that exhibit differential hydraulic conductivities, such as the Williams Fork Formation.

Table 2.05.6-4 lists the springs and seeps found in the vicinity of the mining area. The locations of the investigated springs and seeps are presented on Map 10B. Data collected for the springs and seeps were previously summarized in Table 2.04.7-49.

The potential impacts to springs and seeps listed below are evaluated for each of the three surface drainage areas that will be affected by the mine:

- Elimination of springs and seeps
- Changes in flow
- Formation of new springs and seeps

<u>Little Collom Gulch Area</u>

Two springs (SPRLC-01 and SPRLC-02) maintained flow during July and August 2005 in Little Collom Gulch, and produced a total of 0.30 cfs during spring runoff in June 2005, and 0.045 cfs during August 2005 base flow. (Table 2.04.7-49) Spring/seep SPRLC-03 produced a minor flow of 0.009 cfs in December 2004, and produced no measurable flow for any other sampling event. Springs/seeps V11 and V29 produced no measurable flow for any sampling event. All Little Collom Gulch spring and seep flows subsequently infiltrated into the valley fill or were captured by stock ponds. Streamflow monitoring

point LLCG located near the mouth of Little Collom Gulch was dry throughout the 18 month sampling period.

Spring SPRLC-01 (V24) is located at an elevation of about 7270 ft in Little Collom Gulch within the pit footprint area and will be eliminated by the mining operations. The bedrock groundwater elevation in this area is about 7150 ft so the source of this spring is probably from perched groundwater. Spring V11 was mapped in the Little Collom Gulch drainage area at an elevation of about 7230 ft in the footprint area of the facilities but had no measurable flow during the 2005 and 2006 monitoring events. It may reflect localized discharge from snowmelt but is not a significant spring. It likely will be eliminated by the facility construction.

Spring SPRLC-02 (V30) is located at an elevation of about 6926 ft in Little Collom Gulch near the toe of the temporary spoil pile and in the area of the southeast of the Section 25Pond. Construction of the sediment pond may affect the discharge zone of this spring. Also, the mine dewatering operations may intercept groundwater that normally discharges at the spring and placement of the temporary spoil may intercept local recharge sources for the spring. As a result, spring flow may decrease during mining operations. Springs SPRLC-03 (V31) and V29 are located at elevations of about 6691 ft and 6845 ft, respectively, in Little Collom Gulch north of the temporary spoil pile and the Section 25 Pond. Similar to SPRLC-02, they may experience reduced flows as a result of the dewatering operations and placement of the temporary spoil over potential recharge areas. Neither of these springs is a significant feature and V29 was dry during the 2005 and 2006 monitoring events.

In Little Collom Gulch, the springs potentially affected by mining operations produced a combined average flow of about 0.16 cfs with a maximum flow of about 0.30 cfs and a minimum flow of about 0.015 cfs during the baseline monitoring period.

As discussed below, there is a slight chance for a spring to develop in Little Collom Gulch during the post-mining period if the pit backfill re-saturates up to the elevation that the northern pit highwall daylights in Little Collom Gulch. This spring would discharge groundwater from the mine backfill material. Further evaluation is provided under the discussion of potential impacts to groundwater.

a manner to safely pass peak runoff from a 10 year, 24 hour precipitation event (Please see Exhibit 24, Item 1 –Culverts). During construction of the Collom Haul Road, the field engineer shall determine the need for control measures during construction. Such temporary and permanent control measures would include silt fences, S-fence, straw bales, straw wattles, rock check dams, or other measures such as downstream sediment ponds.

At the request of Moffat County an elevated roadway crossing will be installed where the Collom haul road crosses Moffat County Road 51 (CR-51). Once the elevated crossing is installed, CR-51 will allow public traffic to cross over the top of the Collom Haul Road. An equipment corrider will be installed adjacent to the elevated crossing to provide large equipment access from the exisiting mining areas to the Collom mine. Design details for this elvated crossing can be found on Map 25F.

The Collom Haul Road heavy equipment traffic will cross CR-51 at grade. Only non-production mine traffic will utilize the at grade crossing. All normal light vehicle and coal haul traffic will be separated from CR-51 by an overpass. The at grade crossing will employ typical signage as well as visual indication on the CR-51 approach to the intersection at adequate distance to warn the public of the intersection and potential interaction with mine equipment. Crossing gates to the haul road will be kept in the closed position preventing access to the Collom Haul Road by non-authorized personnel to restrict access onto the Collom Haul Road. When the Colowyo Mine vehicles approach to cross CR-51, gate(s) will close to the CR-51 traffic, then gate(s) will open to the haul road allowing the mine vehicles to pass. Access to the haul road gates will be through authorized Colowyo staff only with appropriate measures to ensure that the public cannot readily open the gates.

For wildlife protection measures on the Collom Haul Road, Colowyo limit's vehicle speed limits to 50 mph at the locations where the Collom Haul Road to the Gossard Loadout intersects established wildlife travel/migration corridors. These areas also have supplemental lightening installed to improve wildlife visibility and to assist in minimizing wildlife/vehicle collisions. Colowyo maintains a record of all wildlife/vehicle collisions if they occur that includes date, time, location, and species involved in the collision.

There is one haul road that will be constructed outside of the Collom Pit to haul coal to the coal stockpile area and primary crusher (please see Map 22B for stockpile and crusher locations). This haul road is shown Map 25D and is designated as the Collom Coal Haul Road. The Collom Coal Haul Road is designed to allow large mining equipment access and egress to and from the pit area to the coal stockpile and coal crushing faciltiy. Once this haul road intercept the crest of the mining limit, within the Collom Pit, it will be exempt from any construction specifications, since roadways within the immediate mining pit area are exempt for construction specifications in accordance with Rule 1.04(111). The Collom Coal Haul Road will be designed and constructed in accordance with Rule 4.03.1 as shown on Map 25D.

Temporary haul roads and in-pit haul road will be utilized to support mining will be developed within the Collom Pit and the Temporary Spoil Pile area. These roads will constantly be changing and moving as the Collom pit advances and as the Temporary Spoil Pile is constructed. In accordance with Rule 1.04(111) these roads will be exempt from design specification required under Rule 4.03.1. They will be designed to Colowyo's internal haul road design standards for the equipment that will be operating on them.

4.03.2 Access Roads

In order to obtain access to the Section 26, Section 25, Section 36, and Middle sediment ponds, access roads will be constructed as shown in Volume 18B, Exhibit 7, Item 23.

Use of these access roads will be for routine environmental monitoring and maintenance activities. Typical road use would consist of several trips per week by a light use vehicle using one way travel and low speed. For design information of the access roads please see Exhibit 7-23 Figures D1 and D2. Any outslopes created from the construction of this access road will be seeded with the mix listed below, post construction.

Several temporary access roads will be constructed to allow access to construct the west side sediment control system and to temporarily haul topsoil to a stockpile. These temporary access roads will be constructed in accordinace with Volume 18B, Exhibit 7, Item 23, Part D. Any outslopes created from the construction of this access road will be seeded with the mix listed below, post construction.

At the entrance to Jubb Creek off Moffat County Road 32, an access road will be established from the temporary facities area to where it ties into the Collom haul road. This access road will allow equipment, supplies, and man power to access and egress during the development of the Collom haul road and Collom factilites area. The Jubb Creek access road will be constructed in accordance with Volume 18B, Exhibit 7, Item 23, Part D. Any outslopes created from the construction of this access road will be seeded with the mix listed below, post construction.

All access roads are designed to meet the standards of Rule 4.03.2 for Access Roads. They are specifically designed to meet the minimum design requirements while minimizing additional disturbed area and preventing environmental damage. Additional discussions of these access roads may be found under Section 2.05.3(3).

The access road cut/fill stabilization seed mix is as follows:

Western wheatgrass @	4 Lbs PLS/Acre
Mountain Brome @	4 Lbs PLS/Acre
Kentucky Bluegrass @	2 Lbs PLS/Acre
Sanfoin @	2 Lbs PLS/Acre
Total	12 Lbs PLS/Acre

Following construction, a report by a registered professional engineer shall be provided to the Division indicating that the roads have been built as designed. Following mining activities, the access roads may be request to remain in place as a private ranch road and therefore would not be reclaimed. Should the access roads be requested to remain post-mining, the applicable surface owner and Colowyo will provide the Division with a letter documenting this request at the appropriate time.

4.03.3 Light-Use Roads

Light roads may be used in portions of the Collom permit expansion area. Typically, these roads are existing ranch or two track roads that were exisiting prior to the development of the Collom operation. Construction and maintenance of these roads are discussed in the Volume 1, Section 4.03.3.

Several light-use road will be utilized to support construction and long-term access to the power line that will provide power to electrical powered equipment in the Collom Pit. The light use road located in the southern portion of Section 36 (T4N, R93W) and the northern portion of Section 1 (T3N, R94W) follows the power line to where it intersects the eastern portion of the Collom Pit and the road will follow the power line out into the future mining areas of the Collom Pit. Other sections of the light use raod will be within the Collom Pit footprint adjacent to the power line itself. Once mining progess to this power line

location, the power line will be moved to the south, and the only portion of the light use road that will reamin is in the southern portion of Section 36 and norther portion of Section 1.

In accordance with Rule 4.03.3 (3), a field-design method will be utilized to construct the light-use road. Topsoil will be removed and windrowed adjacent to the road. Sediment control for the portion of the road that is outside of the Section 25 Pond watershed is described in Volume 18B, Exihibit 7-25D.

4.04 SUPPORT FACILITIES

The original support facilities used at the mining operation, including the office, shop and warehouse complex, and the coal handling and loadout facilities may continue to serve as minor support facilities for this expansion and are shown within the original Colowyo Permit Map 21 and Map 22, Volume 8. Many of the support structures were constructed at the mine start-up in 1976-1977. The complete discussion on all the original support facilities is found under Sections 2.05.3 and 4.04 in Volume 1.

The Collom area facilities will include an administration building, shop and warehouse facility, coal crushing, explosives bunker, sedimentation ponds, utility lines, water lines, and haul roads that will be constructed near the Collom Pit area. These facilities are detailed in the Structure and Facilities Map 22B.

4.05 HYDROLOGIC BALANCE

4.05.1 General Requirements

Please see Section 4.05.1 in Volume 1.

In addition to the mining, reclamation, and treatment methods referenced in this section, further protection of the hydrologic balance will be established by an on-going plan for monitoring potential changes in surface water quality and quantity and valley fill groundwater quality. This monitoring plan is described under Section 4.05.13 and the monitoring locations are graphically shown on Map 10B.

4.05.2 Water Quality Standards and Effluent Limitations

Please see Section 4.05.2 in Volume 1.

4.05.3 Diversions and Conveyance of a Watershed Less than One Square Mile

The drainage and sediment control measures described under Section 2.05.6 and presented in the Erosion and Sedimentation Control Plan will provide for clean water diversion of surface drainages within the Collom Pit area, as needed for mine operations (please see Exhibit 7, Item 23, Part A) . A system of clean water diversion ditches upslope from the mining activities will be constructed to divert surface runoff away from the disturbed areas (Collom Pit). These temporary diversions will be constructed to pass at a minimum the runoff from the precipitation event with a two-year recurrence interval.

Any topsoil stockpile areas that may be constructed outside the confines of engineered sediment control structures will be required to have a perimeter ditch and berm constructed around the entire footprint of the stockpile sufficient to capture and retain any rainwater/snowmelt that may be generated from the stockpile area to preclude loss and/or contamination of the topsoil resource. A demonstration of the effectiveness of sediment control structures to be constructed around several topsoil stockpiles planned outside of primary sediment control may be found under Exhibit 7, Item 23, Part D.

4.05.4 Stream Channel Diversions (Relocation of Streams)

The drainage and sediment control measures described under Section 2.05.6 and presented in the Erosion and Sedimentation Control Plan (Exhibit 7, Item 23) will provide for temporary diversion of surface drainages within the permit area, as needed for mine operations. A system of temporary ditches will be used to divert runoff from disturbed areas to sediment ponds. The natural drainage systems will be restored to historic drainage patterns once diversion ditches are removed; therefore, there will be no permanent diversions of these channels.

The only stream channel that will be impacted by the Collom Pit is the main stream of Little Collom Gulch, an ephemeral stream draining less than one square mile at the upstream pit boundary. Clean water diversions will be installed above the Collom Pit (Exhibit 7, Item 23, Part A) and will be removed as mining progresses. It will also be channelized further downstream, alongside the haul road leading from the Collom Pit to the spoil pile, where it drains greater than one square mile (Exhibit 7, Item 2, Part B).

4.05.5 Sediment Control Measures

Sediment control measures to be implemented are shown in Exhibit 7, Item 23 Erosion and Sedimentation Control Plan, and postmining channels are shown on Map 41B. These facilities, consisting primarily of diversion ditches and sedimentation ponds, will be located, constructed and maintained to avoid erosion and increased contribution of sediment load to runoff.

Facilities to control sediment are typically installed in areas above and/or below the planned sites of disturbance. “Upstream” facilities, such as clean water diversion ditches upslope from the mining activities, serve to divert runoff away from the disturbed areas. Temporary diversion ditches below the disturbed area of the pit will help collect runoff from disturbed areas and route it into the sedimentation ponds. During active mining, the mining areas will aid in retaining sediment within the disturbed areas by catching water in pits, small depressions and dozer basins, etc. Once reclaimed, the basins will drain as they did prior to mining activities (i.e., historic drainage patterns will be re-established).

All temporary diversions will be removed and reclaimed when no longer needed for sediment control in accordance with Rule 4.05.2(2)

Channel lining rock riprap and energy dissipaters will be used when necessary. As stated above, all temporary diversion structures will be seeded and revegetated after removal. Colowyo does not anticipate that there will be any significant excess material resulting from the construction of diversion ditches.

None of the diversions will drain into underground mines.

4.05.6 Sedimentation Ponds

The location, design parameters, and detailed sedimentation calculations of all planned sedimentation ponds are presented in Erosion and Sedimentation Control Plan (Exhibit 7, Item 23). The design plans and specifications for the sedimentation ponds are described in this section (Part C). All sedimentation ponds will be located as close as practical to the areas to be disturbed. Steep terrain in the upper basins precludes location of the ponds at the Collom Pit disturbance boundaries during the critical early phase of operations, necessitating down-valley locations downstream of the Collom Pit and temporary spoil pile footprint. Other methods of sediment control will be located on the reclaimed areas; these methods include the use of contour furrowing, contour drainage ditches, chisel plowing, and revegetation.

Colowyo has specificially provided information regarding Rule 4.05.9(7)(a-e) with respect to the construction of sediment ponds on the design drawings. Please see Exhibit 7-23C, Table 1 and Exh. 7-23 Figures C5 through C9.

Exhibit 7, Item 23, Part C contains calculations used to determine runoff volumes and flow rates for the theoretical 10-year, 25-year, and 100-year, 24-hour precipitation events, as well as annual sediment volumes. The precipitation data were obtained from the NOAA Atlas 2, Volume 3 for Colorado; soil types were obtained from the Soil Conservation Service, and are shown on the soils survey map (Map 5D).

The ongoing mining activities within each watershed of the permit area will create constantly changing hydrologic conditions. The design models are generally based on a static, theoretical scenario, utilizing SEDCAD 4. Please refer to Exhibit 7, Item 23 for a delineation of the areas used for these modeling purposes, the presentation of the assumed worse case scenario, as well as the maps associated with the SEDCAD runs.

The scenario used for the sedimentation ponds corresponds to an active, disturbed operation. In terms of groundwater, Colowyo's pits have remained essentially dry. Discharges from the ponds will remain in compliance with Colowyo's CDPS Discharge Permit. The use of flocculants in sedimentation ponds may also be used in accordance with the provisions of the CDPS Permit.

Sediment will be removed from all sedimentation ponds on an as needed basis or when the sediment level will not allow effective treatment of the runoff resulting from the 10-year, 24-hour precipitation event in accordance with Rule 4.05.2. Quarterly inspections will note the level of sediment in each pond. Ponds will typically be cleaned of sediment when water levels are lowest, and the least amount of precipitation is expected. The removed sediment may be used as topsoil or subsoil if it meets the suitability criteria discussed under Section 2.04.9 or placed in the backfill of the pits. The Division will be notified of this determination if the material is selected as overburden material that can be substituted for or as a supplement to topsoil.

All sedimentation ponds will be designed so that the minimum elevation at the top of the settled embankment is at least one foot above the elevation of the water surface in the pond with the emergency spillway flowing at design depth.

Colowyo will design, construct, and maintain the sedimentation ponds to prevent short-circuiting to the extent possible. As a general rule, the inflow to the ponds will be at the opposite end from the outflow area. The constructed height of the sedimentation pond embankment will be designed to allow for settling. During construction, a registered professional engineer will ensure that the appropriate embankment height is accomplished. For all sedimentation ponds, the entire embankment, including the surrounding areas disturbed by construction, will be seeded after the embankment is completed, using the Topsoil Stockpile/Pond Embankment seed mix described below. The active upstream side of the embankment where water will be impounded will be stabilized, where necessary. Areas in which revegetation is not successful or, where rills and gullies develop, will be repaired and revegetated.

Colowyo will inspect the condition of each sediment pond, sediment trap, or future post-mining stock reservoir on a quarterly basis. All of these types of structures meet the requirements of an impoundment, and the inspection procedures will meet the requirements under Rule 4.05.9 (17). Previously, Colowyo has received a waiver from quarterly inspections for several existing stock reservoirs within the current permit area as described under Section 4.05.9. This waiver changed the inspection frequency to annual. Following construction of any future post-mining stock reservoir in the Collom permit expansion area,

Colowyo may request a similar waiver but until that is approved, the quarterly frequency would apply. Results of all impoundment inspections will be submitted quarterly.

Topsoil Stockpile/Pond Embankment Seed Mix*

Western wheatgrass @ 4 Lbs PLS/Acre
Thickspike wheatgrass** @ 4 Lbs PLS/Acre
Yarrow*** @ 0.15 Lbs PLS/Acre

*mix may be modified as a result of an updated Reclamation Plan, currently under review.
**option to replace Thickspike wheatgrass with Beardless bluebunch wheatgrass or Sheep fescue
***option to replace Yarrow with Cicer milkvetch

4.05.7 Discharge Structures

Please see Section 4.05.7 in Volume 1.

The design requirements for sediment ponds for the existing operation can be found in Volumes 2D, 2E, or in Exhibit 7, Item 15, in Volume 13

Design requirements for all sediment ponds associate with the Collom Pit can be found in Exhibit 7, Item 23.

4.05.8 Acid-forming and Toxic-Forming Spoil

Acid forming materials do not exist in significant quantities within the overburden to be removed by the mining operations. A discussion on the overburden at the Colowyo operation has been conducted as set forth in Section 2.04.6. A discussion of the overburden monitoring plan is set forth in Section 2.05. Acid-Base Accounting shows that 19 feet out of 4,212 feet of analyzed over- and inter -burden has a net acid-generating potential, and the average acid-neutralizing potential to acid-generating potential ratio is strongly weighted toward acid-neutralizing in each borehole (Exhibit 6, Item 9).

4.05.9 Post-Mining Impoundments

Please see Section 4.05.9 in Volume 1.

4.05.10 Underground Mine Entry and Access Discharges

Colowyo currently conducts surface coal mining exclusively.

4.05.11 Groundwater Protection

Please see Section 4.05.11 in Volume 1.

4.05.12 Protection of Groundwater Recharge Capacity

Please see Section 4.05.11 in Volume 1.

4.23.2(5) Holes Not Need to be Plugged

Colowyo will backfill and plugge each highwall miner entrance hole. As required, this will occur within 30 days following coal extraction. Further, all highwall miner entrance holes will be buried by pit backfill during the normal backfill sequence for the pit to remain in compliance with Rules 4.05.1 and 4.05.2.

4.23.2(6) Division Shall Prohibit Auger (Highwall) Mining

There is no probable reason to prohibit the highwall mining in light of no anticipated adverse impacts to water quality, fill stability, pit backfilling, increased resource recovery, and highwall mining is designed for zero subsidence to prevent disturbance or damage to power lines, buildings, or other surface facilities.

4.23.2(7) Backfill and Grading Requirements

Highwall mining will be conducted in accordance with the backfilling and grading requirements of 4.14.

4.25 OPERATIONS ON PRIME FARMLANDS

Since a negative determination of prime farmland was arrived at using the eligibility requirements established for prime farmland under Section 2.04.12, these performance standards do not apply to the present permit application.

4.26 MOUNTAINTOP REMOVAL

Based on the present data, no determination of mountain top removal has been made. When available, the pertinent data will be delivered to the Division for a determination.

4.27 OPERATIONS ON STEEP SLOPES

Mining and reclamation activities for the Collom operation will generally occur on slopes that are less than 20 degrees. On occasion, in limited areas, operations will occur on slopes greater than 20 degrees. In accordance in Rule 4.27.2, operations can occur occasionally on steep slopes and the requirements of Rule 4.27 do not apply. The Collom operations meet this definition.

4.28 FACILITIES NOT LOCATED AT THE MINESITE

All facilities used by Colowyo will be within the current permit boundary. Therefore, this section is not applicable.

4.29 IN SITU PROCESSING

This section is not applicable.

4.30 CESSATION OF OPERATIONS

4.30.1 Temporary

If, for any unforeseeable circumstances, temporary cessation of mining and reclamation operations at the Colowyo operation becomes necessary for a period of thirty (30) days or more, Colowyo will submit to the Division a notice of intention to temporarily cease or abandon mining and reclamation activities. This notice will include a statement of the exact number of acres that will have been affected in the permit area prior to temporary cessation and an identification of back filling, regrading, revegetation, environmental monitoring, and water treatment activities that will continue during temporary cessation.

4.30.2 Permanent

At the permanent conclusion of surface mining operations, Colowyo will close, backfill, or otherwise permanently reclaim all affected areas. The reclamation plans are set forth in Section 2.05.5. The projected post-mining topography is set forth on the Post-mining Topography map (Map 19C).

Colowyo will remove any equipment, structures, or other facilities at the conclusion of mining activities and will reclaim the affected land. Structures that are identified by the landowner to be necessary to conduct post mining activities will be designated at the time of final bond release.