



OGMCOAL DNR &lt;ogmcoal@utah.gov&gt;

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## Emery Deep- Annual Report & Midterm Review

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**Steve Christensen** <stevechristensen@utah.gov>

Mon, Aug 20, 2018 at 2:13 PM

To: Kit Pappas &lt;jpappas@broncoutah.com&gt;, John Gefferth &lt;jgefferth@barr.com&gt;

Cc: Daron Haddock &lt;daronhaddock@utah.gov&gt;, OGMCOAL DNR &lt;ogmcoal@utah.gov&gt;

Good afternoon Kit,

I'm writing in response to your request for an extension for the Emery Deep annual report response as well as the mid-term review response. An extension of 30 additional days is approved for both of the aforementioned responses. As such the revised due dates are:

1) Annual Report (Task #5665)- due September 12th, 2018 (30 days from original due date of August 13th, 2018. See attached #5665 letter).

2) Midterm response (Task #5670)- due September 20th, 2018 (30 days from original due date of August 21st. See attached #5670 letter).

Per the Midterm Completion Letter (See attached), the as-built drawings for the Kinney No. 2 expansion are still due September 25th, 2018 (90 days from receipt of certified letter-June 27th, 2018).

Give me a call if you have questions.

Regards,  
Steve

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Steve Christensen  
Utah Division of Oil, Gas and Mining  
1594 W North Temple, Suite 1210  
Salt Lake City, Utah 84116  
(801) 538-5350  
[stevechristensen@utah.gov](mailto:stevechristensen@utah.gov)

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### 2 attachments

 **06202018.5670.pdf**  
211K

 **06132018.5665.pdf**  
816K



# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

### Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

June 13<sup>th</sup>, 2018

Kit Pappas  
Bronco Utah Operations, LLC  
P.O. Box 527  
Emery, Utah 84522

Subject: 2017 Annual Report Review Completion, Bronco Utah Operations, LLC,  
C/015/0015, Task ID #5665

Dear Mr. Baker:

The Division has completed the review of the 2017 Annual Report. Commitments required by the approved Mining and Reclamation Plan have been identified as outstanding. Enclosed is a copy of the review where a more detailed discussion of the outstanding commitment is provided.

The following commitments have not been adequately addressed:

- 1) Per the requirement for sampling waste material (Chapter II page 22-incorporated July 14<sup>th</sup>, 2017), additional mine development waste analysis is required. See attached review for more information.
- 2) Per the commitment found on page 37 of Chapter V, please revise the provided subsidence maps with the month and year for when the second mining/subsidence took place. See attached review for more information.

Please submit the information to the Division by August 13<sup>th</sup>, 2018. If you have any questions, please call me at (801) 538-5325.

Sincerely,

Daron R. Haddock  
Coal Program Manager

DRH/sqs

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# ANNUAL REPORT

This Annual Report shows information the Division has for your mine. Submit the completed document and any additional information identified in the Appendices to the Division by the date specified by the cover letter. During a complete inspection an inspector will check and verify the information.

## GENERAL INFORMATION

Company Name	Bronco Utah Operations, LLC	Mine Name	Emery Deep Mine
Permit Number	C/015/0015	Permit expiration Date	2021-01-07
Operator Name	Bronco Utah Operations LLC	Phone Number	+1 (435) 286-2027
Mailing Address	Highway 10 South Box 527	Email	jpappas@broncouth.com
City	Emery		
State	Utah	Zip Code	84522

## DOGM File Location or Annual Report Location

Excess Spoil Piles	<input type="checkbox"/> Required <input checked="" type="checkbox"/> Not Required	
Refuse Piles	<input checked="" type="checkbox"/> Required <input type="checkbox"/> Not Required	See Appendix A-2 Quarterly Coal Refuse Inspections
Impoundments	<input checked="" type="checkbox"/> Required <input type="checkbox"/> Not Required	See Appendix A-1 Annual Impoundment Inspections
Other:		

## OPERATOR COMMENTS

Underground mining operations commenced on October 11, 2017 via the newly constructed Emery 2 portals. Appendix A-1 (Annual Impoundment Inspections), Appendix A-2 (Quarterly Coal Refuse Inspections), Appendix B-2 (Annual Subsidence Survey), Appendix B-2a (Monthly Subsidence Reports), Appendix B-5 (Emery Reclamation Study - Annual Qualitative/Quantitative Report), Appendix B-6 (Annual Water Monitoring Summary including Emery Town Well), Appendix D-1 (Annual Map), Appendix E-1 (Interim Reclamation Seed Mix)

## REVIEWER COMMENTS



Met Requirements



Did Not Meet Requirements

The permittee has submitted the annual sediment pond inspection reports. No hazardous conditions were reported. Refuse pile inspections were submitted with no hazardous conditions reported. I inspected these sites and did not see any problems.

# COMMITMENTS AND CONDITIONS

The Permittee is responsible for ensuring annual technical commitments in the Mining and Reclamation Plan and conditions accepted with the permit are completed throughout the year. The Division has identified these commitments below and has provided space for you to report what you have done during the past year for each commitment. If additional written response is required, it should be filed as an attachment to this report.

## **Title: CULTURAL RESOURCE PROTECTION**

**Objective:** To monitor the five eligible cultural resource sites that could be damaged as a result of subsidence in the zero zero north area. Sites include: 42Em3964, 42Em3965, 42Em3969, and 42Em3974.

**Frequency:** Annually after undermining until the Division determines subsidence is no longer an impact.

**Status:** ongoing, Undermining has not occurred to date.

**Reports:** Annual

**Citation:** MRP, Confidential Binder, Chapter X, Part A, Page 1

### Operator Comments

Full extraction mining has not occurred under these sites since 2010, nor will it occur under these sites in the future. Underground mining operations and full extraction in the original Emery sealed old works has ceased and the mine openings have been sealed. The sites mentioned above will not require future monitoring.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

As noted since "Full extraction mining has not occurred under these sites since 2010, nor will it occur under these sites in the future." this commitment should be updated to note that it has been completed. The Division concurs with the permittees findings, (personal conversation with Kit Pappas 5/8/2018). JCH

## **Title: INVESTIGATIVE STUDY INTO RECLAMATION PRACTICE**

**Objective:** To develop an enhanced reclamation plan, based on an evaluation of soil chemistry and vegetation establishment on previous reclaimed sites. (results located in Chapter 11, Appendix 1). This is a four-phase project. Phase I involves reporting on the investigation of past reclamation sites and practices at the mine.

Phase II requires to lower the profile of pond 6 stockpiles, reseed and keep wildlife off piles; reclaim ponds 4 & 5, and pond 1 subsoil pile; adjust final reclamation plans to incorporate beneficial treatments observed such as discing in 1 T/ac straw mulch; modify the seed mix to include only salt tolerant species and allow for a higher percentage of shrubs and forbs; adjust the reference areas to eliminate duplication.

Phase III requires that the applied techniques be evaluated qualitatively annually and quantitatively between the 4th and 6th year. These evaluations will be correlated to precipitation data.

Phase IV requires the permittee to revise the MRP to include the best technology for final revegetation.

**Frequency:** Ongoing

**Status:** Phase I has been met. Phase II has been met (2014).

**Reports:** Qualitative report annually, and quantitative report 4th and 6th year.

**Citation:** MRP, Chapter III, page 4a, and Chapter III, appendix 1

## Operator Comments

Field meetings and historical review were held in April 2014. Three sites were chosen for regrading and revegetation based on soil quality (see CH III pg 4a-4c).  
Annual revegetative monitoring results will be reported through the annual report via Appendix B-5 - Emery Reclamation Study - Annual Qualitative/Quantitative Report.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

Annual revegetative monitoring results are included in this annual report via Appendix B-5 - Emery Reclamation Study - Annual Qualitative/Quantitative Report. Areas surveyed include:

The berm removal,  
The backfilled ditch,  
A topsoil pile,  
A subsoil pile and,  
a reclaimed reverse osmosis pond.

The following changes were noted comparing the data from this survey to that in years 2015 and 2016: even though their cover values remained quite low, the density of desirable plants increased by quite a wide margin in all plots with respect to shrubs and grasses. The total living cover was higher in 2017 when compared to the previous years, but most of this cover was comprised of "weedy" species.

5/15/2018, PB. The reclamation study has now progressed to Item #3, p. 4, Chap III which states that qualitative evaluations of vegetative growth on the stockpiles and contemporaneously reclaimed areas will be performed during the growing season for three years (2015 - 2017), and in year 5 (2019). In the fourth and sixth years (2018 and 2020) a quantitative evaluation will be performed during the growing season.

Soils information is as follows:

berm/removal location near pond 1: the pH was 8.3, EC was over 8.0 and the SAR= 30 from 0-6 and 0-12 inches (MRP, App III-1).  
osmosis pond #4: pH values of 9.2 and 9.6 and SAR values of 17 in the surface 1-6 inches.  
The subsoil and topsoil SAR values were relatively mild at pH 7- 7.9 and SAR from 8 - 11.

The seed tag was sent to the M: 015015/Incoming file on 1/20/2015. All seeds described in the mix on page 4b, Chap III were seeded (note: desert bluebells is *Phacelia crenulata*).

Appendix B5 begins on e-page 82 of the 2017 Annual Report. The 2017 Mt. Nebo evaluation was conducted in September, at the same time as the two previous evaluations. Seeded grasses have become visible. (There were none in the plots in 2016.) Seeded and non-seeded shrub species are dominant in all plots. None of the seeded forbs has succeeded. All forbs are salt tolerant weeds or natives that have self-sowed. Thirteen tamarix plants have emerged in Osmosis Pond 4. These noxious weeds must be controlled.

### **Title: WASTE STOCKPILE MATERIAL**

**Objective:** To identify chemical characteristics of material as it is placed on the Temporary Coal mine Waste Stockpile. Sample and analyze waste for acid toxic parameters in accordance with R645-301-731.300.

**Frequency:** One sample/600 cu yds of coal mine waste brought to the temporary stockpile.

**Status:** Ongoing

**Reports:** Provide analysis in annual report.

**Citation:** MRP, Chapter II, page 10.

## Operator Comments

Waste soils from construction activities at Emery 2 expansion are being stored at the site.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

5/21/2018, PB. By the end of 2017, a total of 97,989 CY of box cut mine development waste had been hauled to the site from the Emery 2 construction (e-page 62, In. 2017 Annual Report). Some of the material was screened and used as road base within the mine disturbed area in 2017. The remaining volume must be sampled as described in Chap II, p. 22. All analyses should be included in the annual report. (The requirement for sampling waste was moved to page 22 Chap II during the Emery 2 Mine revision, stamped incorporated July 14, 2017.)

**Title: SUBSIDENCE MONITORING- MONTHLY INSPECTIONS**

**Objective:** Inspect the area outlined on Plate V-5 as full extraction areas when pillar splitting begins.

**Frequency:** Monthly until there is no record of additional subsidence.

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, Binder 1 of 3, Page 36

Operator Comments

The above text requires revision per the revised subsidence monitoring plan task ID 5567.  
Subsidence inspections will be conducted per Chapter V, section V-B.2 (Subsidence Survey and Monitoring Plan).

Reviewer Comments  Met Requirements  Did Not Meet Requirements

Quarterly Subsidence Inspection Reports were completed throughout 2017 on the following dates: January 13, February 23, March 23, May 9, June 15, August 16, and October 17. All inspections were completed by Kit Pappas, and were focused on the area above the mined out portions of 00 North. Since this area was mined out a long time ago and subsidence is no longer occurring, The Division recommends that Permittee discontinue subsidence monitoring in this area of the mine. Only a very limited amount of non-subsidence development mining occurred in 2017, and therefore no subsidence occurred within the permit area last year. JE

**Title: SUBSIDENCE MONITORING- POINTS OVER PARTIAL PILLAR SECTIONS**

**Objective:** monitor points over partial pillar sections that have been resurveyed once and where no significant movement (<0.5') was found will be surveyed within one year. If this subsequent survey shows no significant movement from the original survey, the point will be surveyed again at one year intervals. Points over advancing sections need not be resurveyed unless there has been evidence that subsidence has taken place (caving).

**Frequency:** As needed

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 36.

Operator Comments

The above text requires revision per the revised subsidence monitoring plan task id 5567.  
Refer to Appendix B-2 (Annual Subsidence Survey)

Reviewer Comments  Met Requirements  Did Not Meet Requirements

N/A - Partial pillar mining was not employed by Permittee at any time during 2017. This commitment will be in effect once partial pillar mining resumes in the future. JE

### Title: SUBSIDENCE MONITORING- NEW POINTS

**Objective:** Resurvey new monitoring points established over advancing sections such as mains and submains within one year after mining has been completed beneath the station. Include dates that points were established to track if the points have been resurveyed within a year after mining has been completed.

**Frequency:** As needed.

**Status:** Ongoing.

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 36.

### Operator Comments

The above text requires revision per the revised subsidence monitoring plan task id 5567.  
Underground mining operations commenced on October 11, 2017 via the newly constructed Emery 2 portals. Additional subsidence monitoring points will be established and surveyed per the approved permit.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

N/A - New points established on Plate V-5 were not undermined in 2017. The West Mains were driven in by only 16 crosscuts in 2017, and new monitoring points were not established for the limited amount of non subsidence development mining that was completed. JE

**Title: SUBSIDENCE MONITORING- REPORT**

**Objective:** Subsidence monitoring report containing: 1.) Mine maps showing where pillars have been pulled and the month and year that such pillars were removed or partially removed. 2.) Maps showing the location of survey monitoring stations and tension cracks and/or compression features visible on the surface. 2a.) Photographs of the subsidence monitoring points above the full extraction areas outlined on Plate V-5 to record pre and post subsidence. 3.) The differential level and horizontal survey summary and 4.) a narrative.

**Frequency:** As needed, report submitted to the Division annually.

**Status:** Ongoing

**Reports:** Provide report in annual report.

**Citation:** MRP, Chapter V, binder 1 of 3, page 37.

Operator Comments

Refer to Appendix B-2a (Monthly Subsidence Reports)

Reviewer Comments  Met Requirements  Did Not Meet Requirements

Since none of the development mining that occurred in 2017 qualified as subsidence mining, no photographs were required in this submittal. However, all of the mine maps showing where pillars have been pulled in the past are lacking the month and year those pillars were removed or partially removed as per the commitments cited on page 37 of Chapter V. JE



**Title: SUBSIDENCE MONITORING- PREMINING ELEVATIONS AND GRADIENTS**

**Objective:** Establish pre-mining elevations and gradients of any irrigation ditches and pond embankments within the angle of draw. The permittee will monitor these areas by visual inspection and post-subsidence ground survey to establish the effects of subsidence.

**Frequency:** As needed.

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 37.

Operator Comments

The above text requires revision per the revised subsidence monitoring plan task id 5567. Underground mining operations commenced on October 11, 2017 via the newly constructed Emery 2 portals. Additional surveys will be conducted per the approved permit.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

N/A - No subsidence mining occurred in 2017, therefore these commitments are not required. JE

**Title: SUBSIDENCE MONITORING- MITIGATION REPORT**

**Objective:** Provide, to the Division on an as-needed basis, a subsidence mitigation report that describes the surface mitigation projects and their status broken down by surface land owners.

**Frequency:** quarterly

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 37.

Operator Comments

The above text requires revision per the revised subsidence monitoring plan task id 5567.  
Refer to Appendix B-2a (Monthly Subsidence Reports)

Reviewer Comments  Met Requirements  Did Not Meet Requirements

N/A - No subsidence mining occurred in 2017, therefore these commitments are not required. JE

**Title: SUBSIDENCE MONITORING- UPDATE PRE-SUBSIDENCE SURVEY**

**Objective:** Update the existing pre-subsidence survey and plates six months before full extraction and provide copies to the surface land owner, the Division and the water conservancy district.

**Frequency:** As needed, six months prior to full extraction.

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 37.

Operator Comments

The above text requires revision per the revised subsidence monitoring plan task id 5567.  
Underground mining operations commenced on October 11, 2017 via the newly constructed Emery 2 portals. Areas where full extraction is contemplated will have the pre-subsidence survey updated and submitted to the Division as required.

Reviewer Comments  Met Requirements

Did Not Meet Requirements

N/A - Permittee is currently in the early stages of development mining. Maps showing future subsidence mining have not been submitted to The Division. This commitment will be in effect once Permittee submits plans to The Division showing where subsidence mining will occur in the next 6 months. JE

**Title: SUBSIDENCE MONITORING- RESURVEY NEW MONITORING POINTS**

**Objective:** Resurvey new monitoring points established over partial pillar sections within six months after final mining has taken place beneath them. Provide dates that points were established to track if the points have been resurveyed within six months after final mining.

**Frequency:** as needed

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 36.

Operator Comments

The above text requires revision per the revised subsidence monitoring plan task id 5567. Subsidence monitoring point ZZ was established in 2017 to monitor previous subsidence areas over the Zero Zero North panel. Underground mining operations commenced on October 11, 2017 via the newly constructed Emery 2 portals. Additional new subsidence monitoring points will be established as required in the permit.

Reviewer Comments  Met Requirements

Did Not Meet Requirements

N/A - Permittee is currently in the early stages of development mining. Maps showing future subsidence mining have not been submitted to The Division. This commitment will be in effect once Permittee submits plans to The Division showing where partial subsidence mining will occur in the next 6 months. JE

**Title: EMERY TOWN WELL MONITORING**

**Objective:** Consol will evaluate data collected from the Emery town wells, using hydrographs and other appropriate means, and submit a report of findings to DOGM with the Annual Report.

**Frequency:** Annually

**Status:** Ongoing

**Reports:** Annual Report

**Citation:** Chapter VI, page VI-56.

Operator Comments

A discussion regarding the Emery Town Well has been included in Appendix B-6 (Water Monitoring Summary including Emery Town Well).

Reviewer Comments  Meet Requirements  Did Not Meet Requirements

The Permittee submitted the required water monitoring summary which includes an evaluation of the Emery Town wells. The report was prepared by EarthFax Engineering Group, LLC.

**Title: MONITOR FIVE ELIGIBLE SITES IN THE ZERO ZERO NORTH AREA FOR IMPACTS FROM MINING**

**Objective:** To monitor eligible cultural resource sites that could be damaged as a result of subsidence. Sites include: 42Em3964, 42Em3965, 42Em3966, 42Em3969, 42Em3974.

**Frequency:** Annually after undermining until the Division determines subsidence is no longer an impact.

**Status:** Ongoing. Undermining was expected to occur in 2010.

**Reports:** Annual Report

**Citation:** MRP, Confidential, Chap. X, Part A. page1.

Operator Comments

Full extraction mining has not occurred under these sites since 2010, nor will it occur under these sites in the future. Underground mining operations and full extraction in the original Emery sealed old works has ceased and the mine openings have been sealed. The sites mentioned above will not require future monitoring.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

This commitment is a repeat of a previous commitment and could be deleted. The Permittee can submit an amendment to the MRP and remove the commitment language. JCH

**Title: WATER MONITORING**

**Objective:** Consol will provide an annual water monitoring summary to be submitted by March 31st.

**Frequency:** Annually

**Status:** Ongoing

**Reports:** Annual Report

**Citation:** Chapter VI, page VI-28.

Operator Comments

Refer to Appendix B-6 (Annual Water Monitoring Summary including Emery Town Well).

Reviewer Comments  Met Requirements  Did Not Meet Requirements

The Permittee submitted the required water monitoring summary which includes an evaluation of the Emery Town wells. The report was prepared by EarthFax Engineering Group, LLC.

## FUTURE COMMITMENTS AND CONDITIONS

The following commitments are not required for the current annual report year, but will be required by the permittee in the future as indicated by the "status" field. These commitments are included for information only, and do not currently require action. If you feel that the commitment is no longer relevant or needs to be revised, please contact the Division.

**Title: SOIL SAMPLING AT 4TH EAST PORTAL**

**Objective:** Verify soil characteristics prior to final reclamation grading through sampling and analysis for pH, SAR, and EC with particular attention to those areas that were treated with dust suppressant.

**Frequency:** At final reclamation.

**Status:** At final reclamation.

**Reports:** report findings to Division.

**Citation:** MRP, Chapter III part C.1, page 11 and Appendix X, part C-3, page 24.

**Title: SOIL SAMPLING OF POND NO. 4 AND POND NO. 9**

**Objective:** To determine if evaporative salts have accumulated to a toxic level.

**Frequency:** at final reclamation

**Status:** at final reclamation.

**Reports:** report to the Division.

**Citation:** MRP, Chapter III, part C-1, page 12.

**Title: SOIL TESTING OF RECLAIMED SITE BEFORE SEEDING**

**Objective:** To verify the suitability of the growth media.

**Frequency:** At reclamation.

**Status:** At reclamation, before seeding.

**Reports:** report to Division.

**Citation:** MRP, Chapter VIII, part C-4, page 21, paragraph 1.

**Title: PERMANENT WASTE DISPOSAL SITE SUBSTITUTE TOPSOIL AND SUBSOIL COVER**

**Objective:** To determine how to segregate best available material within the disturbed area for use as substitute topsoil from less desirable material to be used as cover over the coal mine waste permanent disposal site.

**Frequency:** Prior to construction of permanent disposal site, Consol will resample the gravel pit site for topsoil substitute quality and quantity, and cover material quality. The site will be sampled on one sample per acre grid, with analysis on one foot

**Status:** Future Commitment

**Reports:** report to Division.

**Citation:** MRP, Chap VII, App. VII-2, pg. 2

**Title: IDENTIFY CHEMICAL CHARACTERISTICS OF COAL MINE WASTE PRIOR TO FINAL BURIAL OR TREATMENT**

**Objective:** In accordance with R645-301-731.300, determine chemical characteristics of coal mine waste in existing temporary coal mine waste stockpile. Commitment to core temporary pile in at least 5 locations and analyze waste in 5 ft. intervals for pH, EC, SAR, Acid Base Accounting, Se, B, and texture.

**Frequency:** One year prior to moving the waste

**Status:** Future Commitment

**Reports:** report to Division.

**Citation:** MRP, Chap III, pg. 13

## **REPORTING OF OTHER TECHNICAL DATA**

Please list other technical data or information that was not included in the form above, but is required under the approved plan, which must be periodically submitted to the Division.

Please list attachments:

Reviewer Comments

# MAPS

Copies of mine maps, current and up-to-date, are to be provided to the Division as an attachment to this report in accordance with the requirements of R645-301-525.240. The map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Mine maps are not considered confidential.

Map Name	Map Number	Included		Confidential	
		Yes	No	Yes	No
Annual Subsidence Map		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mine Map		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Reviewer Comments    Met Requirements                       Did Not Meet Requirements

All of the mine maps showing historical mining, including where pillars have been pulled in the past are lacking the month and year those pillars were removed or partially removed as per the commitments cited on page 37 of Chapter V. A map showing dates of historical mining as well as plans for future development and subsidence mining are requested. JE



GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

June 20, 2018

CERTIFIED MAIL RETURN RECEIPT  
9590 9402 1618 6053 11297 10

Kit Pappas  
Bronco Utah Operations, LLC  
P.O. Box 527  
Emery, Utah 84522

Subject: Midterm Permit Review, Bronco Utah Operations, LLC, C/015/0015, Task #5670

Dear Mr. Pappas:

On May 2, 2018, Bronco Utah Operations, LLC was informed that the Division of Oil, Gas and Mining had commenced a midterm permit review for the Emery Deep Mine.

The midterm review has now been completed and will now be closed; however the Division has identified deficiencies that must be addressed. The deficiencies have been included with this letter (see attached). The name of the author for each of the respective deficiencies has been provided. Please provide the responses to the deficiencies by August 21, 2018.

As discussed during the field inspection on May 30, 2018, as-built drawings are needed following the completion of construction of the No. 2 mine. Historically, 60 days has been the time-frame in which as-built drawings are provided to DOGM following the end of construction activity at a mine site. In an effort to work with you and provide some additional time to produce these revisions, DOGM is requiring as-built drawings be provided within 90 days of receipt of this letter.

During the review it was noticed that the Emery plan is somewhat dated and still has references to the Utah Interim program rules (UMCS). Updates to your plan to the current R645 rules is something that should be done before the next midterm review.

If you have any questions, please call me at (801) 538-5325.

Sincerely,

Daron R. Haddock  
Coal Program Manager

DRH/sqs

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# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

### Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

## Technical Analysis and Findings

### Utah Coal Regulatory Program

**PID:** C0150015  
**TaskID:** 5670  
**Mine Name:** EMERY DEEP MINE  
**Title:** MIDTERM PERMIT REVIEW

## Summary

Bronco Utah Operations LLC (the Permittee) owns and operates the Emery Deep Mine located approximately 4 miles south of the town of Emery in Emery County, UT. On May 2nd, 2018 the Division of Oil, Gas and Mining (the Division) notified the Permittee that the mid-term review had commenced and that the following items were being reviewed: A. Review of the Plan to ensure that the requirements of all permit conditions, division orders, notice of violations, abatement plans, and permittee-initiated Plan changes approved subsequent to permit approval or renewal (whichever is the most recent) are appropriately incorporated into the Plan document. B. Ensure that the Plan has been updated to reflect changes in the Utah Coal Regulatory Program which have occurred subsequent to permit approval or renewal. C. Review applicable portions of the permit to ensure that the Plan contains commitments for application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area. D. Evaluate the compliance status of the permit to ensure that all unabated enforcement actions comport with current regulations for abatement; verify the status of all finalized penalties levied subsequent to permit issuance or permit renewal, and verify that there are no demonstrated patterns of violation (POV). This will include an AVS check to ensure that Ownership and Control information is current and correct. E. Evaluate the reclamation bond to ensure that coverage adequately addresses permit changes approved subsequent to permit approval or renewal, and to ensure that the bond amount is appropriately escalated in current-year dollars. F. Evaluate the permit for compliance with variances or special permit conditions. G. Conduct a technical site visit in conjunction with the assigned compliance inspector to document the status and effectiveness for operational, reclamation, and contemporaneous reclamation practices undertaken on predetermined portions of the disturbed area to minimize, to the extent practicable, the contribution of acid or toxic materials to surface or groundwater, and to otherwise prevent water pollution. H. Review and inspect the currently approved Vegetative Reference Areas pursuant to R645-301-356. The review will ensure reference areas continue to represent the success standards of revegetation. The following technical review will evaluate the hydrologic portions of the approved mining and reclamation plan (MRP) including, but not limited to, commitments/permit conditions relative to hydrology and the application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area. A field inspection was conducted by Division staff on May 30th, 2018.

schriste

The Division approved the transfer of the Emery Mine from Consol Energy to Bronco Utah Operations on April 6, 2016 (Outgoing 04062016.5058), at which time a new permit was issued. The mid-term review began May 2nd and is task 5670 (Outgoing 05022018.5670). New portal construction for the Emery 2 Mine was completed in 2017. The 4th East Portal was placed in Temporary Cessation 7 years ago (Incoming document 3082011) and remains inactive.

pburton

## General Contents

## Identification of Interest

### Analysis:

The Mining and Reclamation Plan (MRP) does not meet the State of Utah R645 requirements for Identification of Interests.

On May 22<sup>nd</sup>, 2018, the Division of Oil, Gas and Mining (the Division) received an amendment for the Hidden Valley Mine (Task ID #5681) that revised the ownership and control information. The amendment identifies changes in the control structure for the Hidden Valley Mine property including a new acting chief executive officer (CEO) as well as a new Treasurer/Secretary. As the organizational/ownership structure for Hidden Valley is the same as for the Emery Deep Mine, the revised information must be incorporated into the Emery Deep MRP.

The Division has completed its review of the revised ownership and control information for the Hidden Valley Mine and found that it meets the State of Utah R645 requirements (conditionally approved on June 5<sup>th</sup>, 2018). The same information can now be submitted for review and incorporation into the Emery Deep MRP.

### Deficiencies Details:

The MRP does not meet the State of Utah R645 requirements for Identification of Interests. The following deficiency must be addressed.

R645-301-112: The Permittee must provide revisions to the ownership and control information in Chapter 1 of the Emery Deep Mine Mining and Reclamation Plan (MRP) to reflect changes its officers and directors.

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## Violation Information

### Analysis:

The MRP does not meet the Violation Information requirements of the State of Utah R645-Coal Mining Rules.

The violation information sections of the R645 rules cannot be found compliant at this time. On May 22<sup>nd</sup>, 2018, the Division of Oil, Gas and Mining (the Division) received an amendment for the Hidden Valley Mine (Task ID #5681) that revised the ownership and control information. The amendment identifies changes in the control structure for the Hidden Valley Mine property including a new acting chief executive officer (CEO) as well as a new Treasurer/Secretary. The amendment was conditionally approved on June 5<sup>th</sup>, 2018. As the ownership and control is the same for both the Hidden Valley Mine and the Emery Deep Mine, the newly approved information for the Hidden Valley Mine (Task ID #5681) must be submitted for review and incorporation into the Emery Deep MRP. Once that information has been provided, the Violation Information portions of the Emery Deep MRP can be reviewed.

### Deficiencies Details:

The MRP does not meet the State of Utah R645 requirements for Violation Information. The following deficiency must be addressed.

R645-301-113: The Permittee must provide revised ownership and control information in order to review the adequacy of the violation information in the currently approved Emery Deep Mining and Reclamation Plan (MRP).

schriste

## Right of Entry

### Analysis:

The application does not meet the requirements of R645-301-121.100, current information is requested on the SITLA lease excluded/relinquished area (beneath the Alluvial Valley Floor) which had been shown on Plate V-5. until a recent revision dated 1/26/2018. Please provide updated Right of Entry for the State Lease ML51745-OBA that was previously relinquished.

### Deficiencies Details:

The application does not meet the R645-301-121.100, current information requirements. The following deficiency must be addressed prior to final approval:

R645-301-121.100, Please provide updated Right of Entry for the State Lease ML51745-OBA shown on Plate V-5,

that was previously relinquished.

pburton

## Legal Description

### Analysis:

The MRP meets the State of Utah R645 requirements for Legal Description and Status of Unsuitability Claims.

The MRP discusses areas unsuitable for mining on page 7a of Chapter I. Areas unsuitable for mining are not located within the permit area. The adjacent area contains one dwelling that is occupied intermittently (located in Section 30, Township 225, R6E) and several public roads (depicted on Plate III). Protection of land surface features is presented in Chapter V of the MRP.

schriste

## Permit Term

### Analysis:

The MRP meets the State of Utah R645 requirements for Permit Term.

Active mining operations are underway at the Emery Deep Mine. The extent of the underground workings over the life of the permit is shown on Plate IV-I and IV-2. On page 8 of Chapter 1, the Permittee states, "It is anticipated that mining activities will continue considerably beyond the five year permit term. This will require renewals at the end of each term."

schriste

## Permit Application Format and Contents

### Analysis:

The Mining and Reclamation Plan does not meet the requirements of R645-301-121.100, because of the following:

Chap II, p. 9. Coal Stockpile Area. Two static stockpile areas are in existence, yet third stockpile is described.

Chap VII, Soil Resources Information, p.80 should provide a reference to the 4th East Portal soil survey (AppVII-3), and Emery 2 Soil Surveys ( App. VII-5 and App VII-6).

Also, the MRP does not meet the requirements of R645-301-121.300, because it references the UMC code from the Utah interim program, rather than the Utah Coal Mining R645 Rules which were implemented in 1987. In each instance, these references should be updated with the corresponding R645 Rules in each heading of the application. The Division recognizes that this is a time-consuming and arduous task. Therefore, the Division should request that this overhaul of the MRP be accomplished over the next five years, by the next mid-term review, in accordance with R645-301-123.300.

### Deficiencies Details:

The mining and reclamation plan does not meet the R645-301-123.300 and R645-301-121.100 requirements. In accordance with R645-301-123.300, the Division requests revision of the MRP to reference the R645 Rules over the next five years. The following deficiencies must be addressed prior to mid-term review completion:

R645-301-121.100, Please make the following corrections. Chap II, p. 9. Coal Stockpile Area. Two static stockpile areas are in existence, yet third stockpile is described. Chap VII, p.80 should provide a reference to the Emery 2 box cut soil survey information (App. VII-5 and App VII-6).

pburton

## Permit Application Format and Contents

### Analysis:

The MRP does not meet the State of Utah requirements for Format and Content.

R645-301-121.100 requires that the MRP contain current information as required by R645-301. During the field inspection on May 30th, 2018, it was determined that as-built maps must be submitted to the Division to accurately reflect the facilities/conditions on the ground.

*Deficiencies Details:*

The MRP does not meet the State of Utah requirements for Format and Content. The following deficiency must be addressed:

R645-301-121.100: The Permittee must provide as-built drawings for the Emery No. 2 mine expansion area.

schriste

## Maps and Plans

*Analysis:*

The application does not meet the requirements of R645-301-121.100, because Surface and Coal Ownership Map Plate I-1 should indicate that land previously owned by Robertson West of the County Road in T22S are now owned by Stansfield. The map should be revised accordingly.

*Deficiencies Details:*

The application does not meet the R645-301-121.100, current information requirements. The following deficiencies must be addressed prior to final approval:

R645-301-121.100, Please update Plate I-1 with current surface ownership. i.e. Robertson lands West of the County Rd in T22S were transferred to Stansfield.

pburton

## Environmental Resource Information

### Historic and Archeological Resource Information

*Analysis:*

The Division has determined that the MRP needs to be updated to reflect changes in the Utah Coal Regulatory Program which have occurred subsequent to permit approval or renewal in accordance with R645-303-220.

The section of the Emery mine, (Panel Zero, Zero North) was permanently closed in 2010. Only first or development mining had taken place at the time of closure. However there is a commitment in the Mining and Reclamation Plan (MRP) to monitor the 5 eligible cultural resource sites annually that could be damaged as a result of subsidence in the zero zero north area after undermining until the Division determines subsidence is no longer an impact. they included sites 42Em3964, 42Em3965, 42Em3966, 42Em3969 and 42Em3974.

Since undermining or full extraction did not take place and that section of the mine has been permanently sealed the permittee would no longer be required to monitor the 5 eligible sites.

An amendment to the MRP, (Confidential Binder, Chapter X, Part A, Page 1), needs to be submitted to the Division that reflects the current status, (permanent closure) of mining activities in panel zero zero North noting that the monitoring of sites 42Em3964, 42Em3965, 42Em3966, 42Em3969, and 42Em3974 is no longer required.

*Deficiencies Details:*

The Division has determined that the MRP needs to be updated to reflect changes in the Utah Coal Regulatory Program which have occurred subsequent to permit approval or renewal in accordance with R645-303-220.

The section of the Emery mine, (Panel Zero, Zero North) was permanently closed in 2010. Only first or development mining had taken place at the time of closure. However there is a commitment in the Mining and Reclamation Plan (MRP) to monitor the 5 eligible cultural resource sites annually that could be damaged as a result of subsidence in the zero zero north area after undermining until the Division determines subsidence is no longer an impact. they included sites 42Em3964, 42Em3965, 42Em3966, 42Em3969 and 42Em3974.

Since undermining or full extraction did not take place and that section of the mine has been permanently sealed the permittee would no longer be required to monitor the 5 eligible sites.

An amendment to the MRP, (Confidential Binder, Chapter X, Part A, Page 1), needs to be submitted to the Division that reflects the current status, (permanent closure) of mining activities in panel zero zero North noting that the monitoring of sites 42Em3964, 42Em3965, 42Em3966, 42Em3969, and 42Em3974 is no longer required.

jhelfric

## Operation Plan

### Mining Operations and Facilities

*Analysis:*

The application meets the State of Utah R645 requirements for Mining Operations and Facilities.

R645-301-526: Chapter 2 of Permittee's Mining and Reclamation Plan contains a narrative describing the structures and facilities located within the permit area. Some facilities are labeled as "proposed," indicating that those facilities have not yet been built but there are plans to build in the future. Plate II - 1 illustrates locations of all of the structures and facilities in the main portal area. Plate II - 1A is a map of the same area, but shows the locations of proposed structures. The Division recommends that a note be included on Plate II - 1A indicating that none of the proposed structures have been included in the reclamation bond.

jeatchel

### Subsidence Control Plan Slides and Other Damage

*Analysis:*

The application meets the State of Utah R645 requirements for Subsidence Control Plans for Slides and Other Damage.

A very limited amount of development mining occurred throughout 2017 and during the first half of 2018 as the West Mains were driven from the newly constructed Emery 2 portals. None of the recent mining can be classified as subsidence mining, and a pre-subsidence survey will be performed prior to any planned subsidence mining as per commitments in chapter V of Permittee's approved MRP.

During the midterm inspection on Wednesday, May 30, Mr. Kit Pappas presented the Division with images taken January 29, 2018 of supposed subsidence features. Mr. Pappas indicated the location of the features within NW 1/4 Sec 31 on privately owned farmlands within the permit area. (The surface owner approached the Division recently, wondering if these features were mining related.) Plate V-5 Subsidence Monitoring Points and the current 5 year Mine Map (2017 Annual Report) and Plate I-1 Surface Ownership were consulted. It was determined that the features could not be mining induced subsidence since the location of the alleged features are 0.5 miles from historic mine workings and nowhere near any currently active workings.

jeatchel

### Topsoil and Subsoil

*Analysis:*

The application does not meet the requirements of R645-301-222, Soil Survey, because the soil analysis described in Chap VII.C.4 (p. 83) should include the field parameters outlined in Table 2 and the laboratory parameters outlined in Table 3 of The Division's 2008 Guidelines for Management of Topsoil and Overburden. In addition to the parameters outlined on page 83 of the MRP, Table 3 includes several important parameters for characterization and evaluation of soil.

The Plate VII-1 Soil Map and Plate III-9 Permit Boundaries and Bonding Map require updating with the appropriate shading for the Emery 2 disturbed area.

The application does not meet the requirements of R645-301-234.230, protection of stockpiled materials from erosion with regard to the stockpile of excess boxcut material at the waste rock site (Chap II, p. 17). This stockpile pile should be graded to lessen the slopes and be seeded in accordance with Section VIII.C.6.

As-built volumes of all stockpiles for the Emery 2 mine construction must be confirmed (Chap IV p. 8c).

*Deficiencies Details:*

The application does not meet the R645-301-222 requirements. The following deficiency must be addressed prior to final approval:

R645-301-222, Please update the soil analyses described in Chap VII.C.4 (p. 83) to include the field parameters outlined in Table 2 and all the laboratory parameters outlined in Table 3 of The Division's 2008 Guidelines for Management of Topsoil and Overburden. Please update Plate VII-1 and Plate III-9 to include the appropriate shading for the Emery 2 disturbed area.

R645-301-234.230, The excess boxcut stockpile pile should be graded to lessen the slopes and be seeded in accordance with Section VIII.C.6.

R645-301-121.100, Please confirm as-built volumes of all stockpiles for the Emery 2 mine construction.

pburton

## **Spoil Waste Coal Mine Waste**

*Analysis:*

The application does not meet the requirements of R645-301-121.100, current information, because the MRP assumes only 600 CY of development waste in the coal mine waste stockpile area (Chap II, pg. 22), but recent boxcut development generated 98,000 CY of development waste (2017 Ann Report). Please confirm the volume of boxcut development waste stored on the mine waste stockpile area (Chap II, p. 17) and modify Chap II. C. accordingly.

*Deficiencies Details:*

The application does not meet the R645-301-121.100, current information requirements. The following deficiency must be addressed prior to final approval:

R645-301-121.100, Please confirm the volume of boxcut development waste stored on the mine waste stockpile area (Chap II, p. 17) and modify Chap II. C. accordingly.

pburton

## **Hydrologic Diversion General**

*Analysis:*

The MRP meets the State of Utah R645 requirements for Diversions. As part of the mid-term review the Division evaluated the applicable portions of the permit to ensure that the MRP contains commitments for utilizing the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flow outside of the permit area. A field inspection was performed on May 30th, 2018. The storm water runoff system was inspected (culverts, diversions, sediment ponds etc.). The MRP meets the requirements for Diversions as required in R645-301-732.300, 742.100, 6 / 10 742.200, 742.300, 742.320 and 742.330. The drainage ditch designs consist of a narrative description, design parameters, flow calculations, flow line profiles and cross-sections for each ditch. The Permittee incorporated design parameters including: drainage area calculations, design storm information, curve numbers and channel dimensions. The storm water runoff conveyance system utilizes a series of diversion ditches,

culverts and berms to ensure the routing of water to sedimentation ponds prior to discharging from the site. All diversions are depicted on Surface Drainage Control Maps Plates VI-10, VI-10A, VI-10B, VI-10C, VI-10D and VI-10E. Table VI-18 provides a summary of the operational diversion ditches and culverts at the mine site. The table provides design criteria utilized in the sizing of the ditches including: bottom width, side slopes, design flow depth and the design storm event. Detailed design calculations and drawings are presented in Appendix VI-6 and VI-21 of the MRP. Appendix VI-21, Emery 2 Surface Facility Hydrologic Design Calculations provides the design calculations and supporting narrative as to how the Emery 2 mine expansion safely conveys storm water runoff and prevent additional contributions of suspended solids to adjacent drainages. Based on the design information and supporting calculations provided in Appendix VI-21, all diversions have been designed comply with R645-301-742.323. The disturbed berms (DB-1 thru DB-3), disturbed culvert (DC-1), disturbed drainage ditches (DD-1 thru DD-5) have been designed to safely convey the storm water runoff generated from a 10-year, 6-hour event. Appendix VI-22, Baseline Investigation of Unnamed Ephemeral Wash Affected by Emery 2 Surface Facilities characterizes the unnamed drainage that lies within the proposed mine expansion area as ephemeral and draining an area less than one mile. However; the culverts that will route undisturbed drainage around the mine expansion (UC-1 and UC-2) have been designed to safely convey the runoff generated from a 100-year, 6-hour event, which exceeds the required design storm standard. Additionally, undisturbed berms have been designed to safely convey a 100-year, 6-hour precipitation event. In both instances, the required performance standard for these types of diversions has been exceeded. The design storms used for the diversion ditches in the remainder of the Emery Deep Mine property were a 10-year/24-hour event for temporary ditches (not associated with refuse disposal areas) and a 100-year/24-hour event for permanent stream diversions, waste disposal site diversion and ditches associated refuse disposal areas. The ditches have been designed to maintain flow velocities during design storm event peak flows under 4.0 feet per second (fps) in earthen channels and less than 12 fps in rock lined channels. The Permittee has committed to utilizing rock checks and/or other stabilizing structures in earthen channels where gradient slopes result in peak velocities exceeding 4.0 fps.

schriste

## Hydrologic Stream Buffer Zones

### *Analysis:*

The MRP meets the State of Utah R645 requirements for Stream Buffer Zone.

R645-301-731.600 requires that no land within 100 feet of a perennial stream or an intermittent stream or an ephemeral stream that drains a watershed of at least one square mile will be disturbed unless the Division specifically authorizes coal mining and reclamation operations to occur closer to, or through such a stream. Page VI-27 discusses stream buffer zones. Plate V-5, Subsidence Monitoring Points and Buffer Zones, depicts the location of stream buffer zones established on both Christiansen Wash and Quitchupah Creek. All perennial and intermittent streams in the permit area are protected by 100-foot stream buffer zones on either side of these streams. Coal mining and reclamation operations have been designed to minimize any adverse effects on water quantity and quality for these receiving streams. Areas surrounding the streams that are not to be disturbed are designated as buffer zones, and the Permittee has marked these areas as specified in R645-301-521.260.

The Emery No 2 expansion is located within an unnamed drainage tributary to Quitchupah Creek. Appendix VI-22, Baseline Investigation of Unnamed Ephemeral Wash identifies the drainage as ephemeral. Additionally, the unnamed drainage drains a watershed of less than one square mile. The Permittee utilizes an undisturbed by-pass culvert to safely convey the flow from the unnamed channel around the proposed expansion area. The by-pass culvert has been designed per the requirements of R645-301-742.300. The Permittee has also obtained a Stream Alteration Permit from the State of Utah Division of Water Rights (See Appendix VI-20, Stream Alteration Permit for the Emery 2 Surface Facility).

schriste

## Hydrologic Sediment Control Measures

### *Analysis:*

The MRP meets the State of Utah R645 requirements for Sediment Control Measures.

As part of the mid-term review the Division evaluated the applicable portions of the permit to ensure that the MRP

contains commitments for utilizing the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flow outside of the permit area. Revisions to the approved MRP relative to Sediment Control Measures are not required at this time. A field inspection was performed on May 30<sup>th</sup>, 2018. The storm water runoff system was inspected (culverts, diversions, sediment ponds etc.).

The approved MRP outlines the utilization of diversion channels, sedimentation ponds, containment berms, silt fences and road diversions and culverts as the primary sediment control measures. The application meets the Sediment Control Measure requirements as provided in R645-301-732. On page VI-38, the application discusses the various sediment control measures implemented at the site. The sediment control measures have been designed, constructed and maintained to accomplish the following:

- Prevent additional contributions of sediment to stream flow or to runoff outside the permit area;
- Meet the effluent limitations defined in Section VI.5.1; and
- Minimize erosion to the extent possible.

The sediment control plan includes:

- Retention of sediment within the disturbed area;
- Diversion of runoff away from the disturbed area;
- Diversion of runoff using channels or culverts through disturbed areas to prevent additional erosion;
- Provision of riprap, silt fences, site revegetation, ponds and other measures that reduce overland flow velocities, reduce runoff volumes, or trap sediment; and
- Treatment of mine drainage in underground sumps prior to being discharged to the surface.

The Permittee also utilizes a number of alternative sediment control methods for surface drainage that does not pass through a sedimentation pond. Details regarding the alternative sediment controls are provided in Appendix VI-8. Table VI-21 provides the locations of the alternative sediment controls that have been installed at the mine site. Alternative sediment control measures installed at the site include: runoff collection berms, rock check dams, silt fences and vegetative cover.

schriste

## Hydrologic Siltation Sedimentation

### *Analysis:*

The MRP meets the State of Utah R645 requirements for Sedimentation Ponds.

The sedimentation ponds utilized on the property meet the requirements as provided in R645-301-732.200 and -742.220. The mining operation utilizes 5 sedimentation ponds, not including the 3 mine-water discharge ponds. Discussion of the design of the mine-water discharge and sedimentation ponds are discussed in Section VI.4.2.2 of the MRP.

The sedimentation ponds were designed to provide treatment or full containment of the total runoff volume from a 10-year, 24-hour precipitation event. The sedimentation ponds were constructed with a dewatering system consisting of slide gates that remain closed except when dewatering. Dewatering of these ponds occurs after a minimum of 24 hours of storm water detention is provided to achieve effluent limitations. A registered professional engineer certified all sedimentation ponds at the Emery Mine after construction with as-built drawings submitted and approved by the Division. In addition, all ponds are inspected in accordance with applicable regulations.

Plans and cross sections associated with the sedimentation and mine-water discharge ponds are located provided on Plates VI-14 through VI-20, Plate VI-20A and Appendix VI-7 of the approved MRP. Each plan is designed to work individually to manage the design sediment volume and safely convey the peak discharge rate from its respective drainage area. All sedimentation ponds are located as near as possible to the disturbed areas that report to them.

Sediment storage and cleanout quantities (i.e. volumes and elevations) are presented in Table VI-19. The calculations utilized to generate these quantities are presented in Appendix VI-7. The Permittee commits to clean out each pond when its actual sediment storage equals 60% of the design volume.

The Emery No. 2 expansion utilizes a drainage conveyance system that routes and/or pumps all disturbed drainage to existing Sediment Pond 3. Sediment Pond 3 was originally designed and approved to contain the runoff resulting from a

100-year, 6-hour event from a smaller drainage area that what will not contribute to the pond following the mine expansion. The Permittee redesigned Pond 3 to contain and safely treat the runoff generated from a 10-year, 24-hour precipitation event as required per R645-301-742.220, and 221.33. As Pond 3 had previously only collected runoff from the coal stockpile area, the pond was enlarged to collect and treat runoff from the mine expansion area. The stage-storage capacity for Pond 3 is provided in Table 3 of Appendix VI-21. On page 5 of Appendix VI-21, the Permittee states, "Sediment will be removed when 60% of the design sediment capacity (11,380 cubic feet) has accumulated (an elevation of approximately 5,905.15').

schriste

## Hydrologic Ponds Impoundments Banks Dams

### Analysis:

The MRP meets the State of Utah R645 requirements for Ponds, Impoundments, Banks, Dams and Embankments.

The embankments are discussed on page VI-29 of the MRP. The embankments were designed and constructed to maintain a combined upstream and downstream slope of not less than 1v: 5h, with neither slope steeper than 1v: 2h. The Permittee has committed to utilizing rock checks and/or other stabilizing structures in earthen channels where gradient slopes result in peak velocities exceeding 4.0 fps. In addition, channel bottoms will be armored with rock riprap where necessary.

It should be noted that during the construction of the sedimentation ponds, the embankment materials were free of sod, large roots, frozen soil and acid- or toxic-forming coal processing waste. The embankments were compacted during placement of the materials.

schriste

## Reclamation Plan

### Topsoil and Subsoil

### Analysis:

The MRP does not meet the requirements of R645-301-121.100, current information, because as built excavation volumes must be provided in Chap IV, p. 8c and 8f and Section IV. B, Table III-1A. and Chap III pg 15g and 15h . The MRP assumed 114,350 CY of excess cut material would be stored at the waste disposal site for use in final reclamation (based on a 30% swell factor). The 2017 Annual Report states that there was 97,989 CY placed at the waste rock site. The MRP estimates 149,000 CY is required for reclamation. Changes to the the reclamation plan resulting from the as built volumes should be updated in the cut/fill balance provided in Chap III, Table III-1 and Chap III p. 15d-g and p. 21a. Changes to the bonding should be addressed accordingly.

### Deficiencies Details:

The application does not meet the R645-301-121.100, current information requirements. The following deficiency must be addressed prior to final approval:

R645-301-121.100, As built excavation volumes must be provided in Chap IV, p. 8c and 8f and Section IV. B, Table III-1A. and Chap III pg 15g and 15h . Changes to the the reclamation plan resulting from the as built volumes should be updated in the cut/fill balance provided in Chap III, Table III-1 and Chap III p. 15d-g and p. 21a. Changes to the bonding should be addressed accordingly.

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## Bonding Determination of Amount

### Analysis:

The application does not meet the State of Utah R645 requirements for Determination of Bonding Amount.

The reclamation cost estimate which is incorporated into the current Emery Deep Mining and Reclamation Plan has not been updated to current unit costs. Direct unit costs used to calculate the bond estimate need to account for overhead and profit costs (O&P), and be updated and escalated to 2023 dollars.

The State of Utah Technical Directive 007 (Tech 007) details how all Permittees are expected to appropriately calculate reclamation bonds within the State of Utah, and has recently been amended. The approved changes are to be enacted in 2018, and applied at the time of permit renewal or midterm review. One of the most significant items that is addressed in the updated version of Tech 007 is that overhead and profit costs should be applied to all direct unit costs. Taking this into account, the Permittee must provide updated information for estimated bonding costs with supporting calculations for all cost estimates with O&P applied to the direct unit costs and escalated to 2023 . The updated 5 year escalation factor to be used in the bonding calculations is 1.78%.

*Deficiencies Details:*

The application does not meet the State of Utah R645 requirements for Determination of Bonding Amount. The following deficiency must be addressed prior to final approval:

R645-301-830: The reclamation cost estimate which is incorporated into the current Emery Deep Mining and Reclamation Plan needs to be updated. Direct unit costs used to calculate the bond estimate need to account for overhead and profit costs (O&P), and be escalated to 2023 dollars.

jeatchel