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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

June 20, 2019

Rick Parkins, Manager
Bronco Utah Operations, LLC
P.O. Box 527
Emery, Utah 84522

Subject: 2018 Annual Report Review Completion, Bronco Utah Operations, LLC, C/015/0015, Task ID #5933

Dear Mr. Parkins:

The Division of Oil, Gas and Mining (the Division) has completed the review of the 2018 Annual Report. Upon review of the submitted annual report, the Division has determined that additional information is required.

1) The Permittee must clarify the total volume of rock (waste rock and box cut material) stored at the waste rock site and the remaining capacity of the waste rock site. The annual certified refuse pile inspection states that 97,960 cubic yards of waste rock are stored at the waste rock site (See pg. 48 of the 2018 Annual Report). However; the Emery Deep mid-term review (Task #5864) indicated that 108,800 cubic yards of box cut material is stored at the waste rock site (See Chapter III, pg. 15G). Please clarify the discrepancy.

Please submit the information to the Division by August 21, 2019. If you have any questions, please call me at (801) 538-5350.

Sincerely,

Steve Christensen
Coal Program Manager

SKC/sqs

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UTAH DNR OIL, GAS & MINING

2018 ANNUAL REPORT

Submit the completed document and any additional information identified to the Division by March 31, 2019.

GENERAL INFORMATION

Company Name	Bronco Utah Operations, LLC	Mine Name	Emery Deep Mine
Permit Number	C/015/0015	Permit Expiration Date	2022-01-07
Operator Name	Bronco Utah Operations LLC	Phone Number	+1 (435) 286-2027
Mailing Address	Highway 10 South Box 527	Email	jpappas@broncoutah.com
City	Emery		
State	Utah	Zip Code	84522

		DOGM File Location or Annual Report Location
Excess Spoil Piles	☐ Required ☒ Not Required	
Refuse Piles	☒ Required ☐ Not Required	See Appendix A-2, Quarterly Coal Refuse Inspections
Impoundments	☒ Required ☐ 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 Impoundments Inspections), Appendix A-2 (Quarterly Coal Refuse Inspections), Appendix B-2 (Annual Subsidence Survey), Appendix B-5 (Emery Reclamation Study - Annual Qualitative/Quantitatve Report), Appendix B-5a (Emery Refuse Pile Waste Rock/Shale Samples, Appendix D-1 (Annual Map)

REVIEWER COMMENTS ☐ Met Requirements ☒ Did Not Meet Requirements

5/17/2019, PB. The annual certified refuse inspection does not meet the reporting requirements, because the reports state that 97,960 CY of waste rock are stored at the waste rock site (See pg. 48 of the 2018 Annual Report), but this figure does not agree with the as builts received on 2/20/2019 (Emery mid-term review Task 5864), which state that 108,800 CY of excess box cut material are stored at the waste disposal site (Chap III, p. 15g). Please clarify the total volume of rock (waste rock and box cut) stored at the waste rock site and the remaining capacity of the waste rock site.

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: 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 part of the midterm review process, this commitment was identified as being unnecessary due to the fact that the relevant portion of the mine was not mined with full extraction methods and has since been sealed. Upon approval of the midterm completion (Task #5864), this commitment can be removed from the annual report. TM

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 between 4th and 6th year.
Citation: 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

5/17/2018, PB. The Permittee must take steps to the tamarix growing in the reverse osmosis pond study area.

The reclamation study has now progressed to Item #3, p. 4, Chap III which states that in the fourth and sixth years (2018 and 2020) a quantitative evaluation will be performed during the growing season. The quantitative evaluation is found on 3-pg. 65 of the 2018 Annual Report. Sampling was conducted on July 20, 2018. A record of the seeded species was sent to file on 1/20/2015 and included the following shrubs: Atriplex canescens, A. confertifolia, A. corrugate, A. gardneri var. cuneata and Krascheninnikovia lanata. The following grasses were seeded: Elymus junceus, E. smithii, Hilaria jamesii, Sporobolus airoides, S. flexuosus, Stipa hymendoides. Seeded forbes: Eriogonum umbellatum, Helianthus annuus, Phacelia crenulata, Sphaeralcea grossulariaefolia.

The 2018 quantitative survey reports 8% living cover on the subsoil berm and backfilled ditch (berm removal) area. Shrubs accounted for 55-67% of this cover; weedy forbs accounted for 27-44% of the cover, and grasses composed 0 – 6% of the total cover. Elymus smithii (Western wheatgrass) was encountered on the berm area with 20% frequency. Woody plant density was reported to be 3,920/ acre on the berm and 6,358/acre on the berm removal area. Approximately 15% of which were not seeded. Note: soils data for the Berm/berm removal locations: the pH was 8.3, EC was over 8.0 and the SAR= 30 (MRP, App III-1).

The topsoil and subsoil stockpiles had respectable cover of 32-33%. Woody plant density was noticeably lower compared to the berm/ removal areas. The cover composition included 17 – 24% shrubs, and 1 to 8% grasses (the remaining cover was by weedy forbs). Atriplex canescens (4-wing saltbush), Krascheninnikovia lanata (winterfat) and Elymus junceus (Russian wildrye) were the most encountered species. Note: the subsoil and topsoil stockpile SAR values were relatively mild at pH 7- 7.9 and SAR from 8 – 11.

The reverse osmosis pond had 37% cover. Most of the cover (85%) was by the weed halogeton, but 10% of the cover was shrubs and 3% was grasses. Note soil data for the
osmosis pond #4: pH values of 9.2 and 9.6 and SAR values of 17. Woody plant density was the lowest recorded. Tamarix was approximately 10% of the woody species. Tamarix is a State of Utah Class 3 weed. This designation means that new populations of tamarix must be reduced or eliminated. The Permittee must take steps to control this population of tamarix.

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: 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

This subsidence commitment was removed from the currently approved Mining and Reclamation Plan with the review and approval of Task #5567, Subsidence Monitoring Revision (January 26th, 2018). The Annual Report for the Emery Deep Mine has been revised accordingly. JE - 6/13/19

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: 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

This subsidence commitment was removed from the currently approved Mining and Reclamation Plan with the review and approval of Task #5567, Subsidence Monitoring Revision (January 26th, 2018). The Annual Report for the Emery Deep Mine has been revised accordingly. JE - 6/13/19

Title: SUBSIDENCE MONITORING- REPORT

Objective: Subsidence monitoring report containing: 1.) Mine maps showing where pillars have been pulled. 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

All subsidence in 2018 took place on Bronco surface. Monthly observations and reporting will commence when subsidence takes place on private, federal, or state surface. Subsidence on Bronco surface was surveyed and is included in Appendix B-2 (Annual Subsidence Survey)

REVIEWER COMMENTS ☒ Met Requirements ☐ Did Not Meet Requirements

Appendix B-2 includes the results of a differential level survey provided by Ware Surveying and Engineering. Most of the surveyed points report little to no movement with the exception of 2E-X5 which dropped 4.99 feet. JE - 6/13/2019

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

This subsidence commitment was removed from the currently approved Mining and Reclamation Plan with the review and approval of Task #5567, Subsidence Monitoring Revision (January 26th, 2018). The Annual Report for the Emery Deep Mine has been revised accordingly. JE - 6/13/19

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: 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

This subsidence commitment was removed from the currently approved Mining and Reclamation Plan with the review and approval of Task #5567, Subsidence Monitoring Revision (January 26th, 2018). The Annual Report for the Emery Deep Mine has been revised accordingly. JE - 6/13/19

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: 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

This subsidence commitment was removed from the currently approved Mining and Reclamation Plan with the review and approval of Task #5567, Subsidence Monitoring Revision (January 26th, 2018). The Annual Report for the Emery Deep Mine has been revised accordingly. JE - 6/13/19

Title: EMERY TOWN WELL MONITORING

Objective: 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 can be found at CH VI pages VI-26, VI-27 and Figure VI-21.

REVIEWER COMMENTS ☒ Met Requirements ☐ Did Not Meet Requirements

During the review and subsequent approval of Task #5847, the Permittee submitted a substantive revision to the Probable Hydrologic Consequences section of the Mining and Reclamation Plan (MRP). As part of that revision, the Emery Town well data was thoroughly analyzed and provided to the Division for inclusion into the MRP. At that time, the Permittee requested the revised PHC be counted towards satisfying this condition. The Division agreed. The information for the Emery Town Wells has not historically been submitted for inclusion into the actual MRP itself. The Division felt that the request was reasonable and went above and beyond the requirements of this commitment.

Title: WATER MONITORING

Objective: 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

See CH VI, Pages VI-4 through VI-9, Figures through VI7, Figure VI-22, Appendix VI-19 and Appendix VI-23 for water monitoring.

REVIEWER COMMENTS ☒ Met Requirements ☐ Did Not Meet Requirements

During the review and subsequent approval of Task #5847, the Permittee submitted a substantive revision to the Probable Hydrologic Consequences section of the Mining and Reclamation Plan (MRP). As part of that revision, the Emery Town well data as well as the quarterly water monitoring data submitted to the Division were thoroughly analyzed and provided to the Division for inclusion into the MRP. At that time, the Permittee requested the revised PHC be counted towards satisfying this condition. The Division agreed. The information for the Emery Town Wells has not historically been submitted for inclusion into the actual MRP itself. The Division felt that the request was reasonable and went above and beyond the requirements of this commitment.

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: 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: 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: 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, resample of 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: Chap VII, Appendix VII-2, page 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: Chapter III, page 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:

See Appendix B-5a (Emery Refuse Pile Waste Rock/Shale Samples) for analysis for material from the Emery 2 boxcut for possible use during reclamation

REVIEWER COMMENTS ☒ Met Requirements ☐ Did Not Meet Requirements

5/17/2019, PB. The annual report was received on 5/10/2019. On e-pg. 48 of the 2018 Annual Report, the 4th Quarter Refuse Inspection states that 97,960 CY were placed in the refuse pile. (Remaining storage capacity is 40,000 CY). The report further states that some of the sandstone material has been sorted for use as road base. As-builts received 2/20/2019 (Emery mid-term review Task 5864) state that 108,800 CY of excess box cut material are stored at the waste disposal site (Chap III, p. 15g).

Chap II p. 22 describes the waste rock site. Currently there are no frequency requirements for sampling.

Samples of waste rock are in Appendix B-5a of the 2018 Annual Report (e-pg. 85). Two samples (labeled sandstone and shale) were received by Intermountain Labs (Sheridan, WY) on 10/18/2018. The sandstone material is isolated from the shale waste rock at the refuse site. The pH and EC values of both sandstone and shale are good to fair, but the shale has an SAR value of 26 and an ESP of 27%. These results are similar to the samples pulled from the reclaim tunnel excavation (e-pg 53, 2016 Annual Report). In final reclamation the shale must be covered with four feet of suitable soil. The sandstone is suitable cover for the shale.

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		☐	☒	☐	☒
Mine Map		☒	☐	☐	☒
		☐	☐	☐	☐
		☐	☐	☐	☐
		☐	☐	☐	☐

REVIEWER COMMENTS ☒ Met Requirements ☐ Did Not Meet Requirements

A PE certified mine map has been included that illustrates historic + present day underground mine workings across the entire permit area. Federal coal lease areas as well as an adjacent area boundary are also shown. Topographical contours and surface facilities such as mine offices, drill holes, and survey control points are also displayed. JE - 6/13/2019