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Emery Deep 2016 Annual Report

Suzanne Steab <suzannesteab@utah.gov>

Tue, Aug 1, 2017 at 7:07 AM

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Cc: "Christensen, Steve" <stevechristensen@utah.gov>, "Haddock, Daron" <daronhaddock@utah.gov>

Hello,

The Division received the requested additional information for the Emery Deep Annual Report on July 10, 2017. The Division has reviewed this information and finds the 2016 Annual Report to be complete.

Attached is the Revised Annual Report.

Thank you

—

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 **Emery Deep.pdf**
68K

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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@broncoutah.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 have been idle with no production since 12/17/10. A permit revision has been approved to construct a new portal (Emery 2 Expansion).

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-4 (Emery Town Well Report), Appendix B-5 (Emery reclamation vegetation Qualitative/Quantitative report), Appendix B-6 (Water Monitoring Summary), Appendix D-1 (2016 Annual Map)

REVIEWER COMMENTS

Met Requirements Did Not meet Requirements

The Permittee has submitted the requisite information/reports as outlined in the following commitments.

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

No mining occurred under these sites. Underground mining operations have been idle with no production since 12/17/10.

Reviewer Comments Met Requirements Did Not Meet Requirements

The Division concurs with the permittee's findings.

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).

Future revegetative monitoring results will be reported through the annual report via Appendix B-5 - Emery Reclamation Study - Revegetation Qualitative/Quantitative Report

Reviewer Comments Met Requirements Did Not Meet Requirements

Phase III of the 5 part reclamation revegetation study is ongoing. The qualitative and density data for 2016 is for the second year of annual qualitative data collection and is included as Appendix 5B of this annual report. In addition to the collection of qualitative data, quantitative data will be collected in years 4 (2018) and 6 (2020) of the study. Sites selected for data collection included:

The berm removal area, the backfilled ditch area, the subsoil area, the topsoil area and the reverse osmosis pond area.

In general the grasses are phasing out and the shrubs are increasing in all but the Berm Removal and Backfilled Ditch areas where they stayed the same and dropped by 35% respectively. In addition to the 2017 monitoring, the soils scientist and biologist from DOGM, consultant and permittee should visit these sites during the 2017 growing season.

7/3/2017. P. Burton. Appendix B5 begins on electronic page 116 of the 2016 Annual Report. The Mt. Nebo evaluation was conducted in September 2016. The Mt. Nebo report includes qualitative estimates of total living cover (including weeds) and quantitative density counts of desirable species. In general, shrub species, especially four-wing saltbush, rather than grass species are more successful. This may be due to deeper root systems of shrubs.

Poor vegetation at the berm/removal location near pond 1 was noted in comparison to other locations. In this location, 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). Similarly, the poor vegetation at the osmosis pond #4 reflects its pH values of 9.2 and 9.6 and SAR values of 17 in the surface 1-6 inches. In comparison, where shrubs such as 4-2ing and winterfat were thriving, the subsoil and topsoil SAR values were relatively mild at pH 7- 7.9 and SAR from 8 – 11.

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 bind stored at the site. Underground mining operations have been idle with no production since 12/17/10.

Reviewer Comments Met Requirements Did Not Meet Requirements

Revised 7/27/2017. 7/3/2017, PB. Electronic page 53 provides the second quarter waste inspection report with photographs of the placement of fill material at the waste rock site in 2016. Soils from the reclaim tunnel, pond #3 enlargement and alluvium (from the conveyor system cut) were sampled on August 30, 2016 for their potential use as cover material (Insp Rpt #5620). The analyses were

received by the Division on July 12, 2017. At present, soils from the reclaim tunnel are unsuitable for use as cover in the surface four feet due to the SAR value of 18.8 in the sandy loam. Its possible that the sodium could leach from the material over time, allowing it to be used in the root zone. The Alluvium and Pond 3 soils are suitable for use as subsoil cover in the root zone.

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

Underground mining operations have been idle with no production since 12/17/10. Annual subsidence surveys were performed in 2016 (refer to Appendix B-2 - Annual Subsidence Survey). Monthly subsidence reports of the 00 North subsidence area that was previously mitigated are underway and per DOGM email dated 10/12/13, copies of the monthly subsidence report are being emailed to the Division. All subsidence reports were not emailed to the Division in 2016. Beginning in 2017, the reports will be emailed as well as compiled in the Annual Report.

Reviewer Comments Met Requirements Did Not Meet Requirements

NA- The Emery Deep Mine has been idle since December 2010. As such, active mining operations did not occur during 2016. However; with the Emery No. 2 Mine in current development, if second mining were to be approved by the Division and occur at the mine, this information will be required in subsequent annual reports.

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

Refer to Appendix B-2 2016 Annual Subsidence Survey.

Reviewer Comments Met Requirements Did Not Meet Requirements

A subsidence survey conducted by Ware Surveying & Engineering in December 2016 found that all survey points on the permit area were either stable or had only subsided to a negligible degree (<0.1). Walking surveys were also conducted for seven months during 2016 to locate visible subsidence features. In February two new sinkholes were located, but had been mitigated by April. (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

N/A, Underground mining operations have been idle with no production since 12/17/10.

Reviewer Comments Met Requirements Did Not Meet Requirements

NA- The Emery Deep Mine has been idle since December 2010. As such, active mining operations did not occur during 2016. However; with the Emery No. 2 Mine in current development, if second mining were to be approved by the Division and occur at the mine, this information will be required in subsequent annual reports.

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

Underground mining operations have been idle with no production since 12/17/10. Annual subsidence surveys were performed in 2016 (refer to Appendix B-2 - Annual Subsidence Survey). Monthly subsidence reports of the 00 North subsidence area that was previously mitigated are underway and per DOGM email dated 10/12/13, copies of the monthly subsidence report are being emailed to

the Division. All subsidence reports were not emailed to the Division in 2016. Beginning in 2017, the reports will be emailed as well as compiled in the Annual Report.

Reviewer Comments Met Requirements Did Not Meet Requirements

Once mining activities have recommenced in 2017 be sure to include a map specifying the month and year pillars were removed or partially removed as well as a map showing the location of survey monitoring stations and tension cracks. (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

N/A, Underground mining operations have been idle with no production since 12/17/10.

Reviewer Comments Met Requirements Did Not Meet Requirements

NA- The Emery Deep Mine has been idle since December 2010. As such, active mining operations did not occur during 2016. However; with the Emery No. 2 Mine in current development, if second mining were to be approved by the Division and occur at the mine, this information will be required in subsequent annual reports.

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

Underground mining operations have been idle with no production since 12/17/10. Annual subsidence surveys were performed in 2016 (refer to Appendix B-2 - Annual Subsidence Survey). Monthly subsidence reports of the 00 North subsidence area that was previously mitigated are underway and per DOGM email dated 10/12/13, copies of the monthly subsidence report are being emailed to the Division. All subsidence reports were not emailed to the Division in 2016. Beginning in 2017, the reports will be emailed as well as compiled in the Annual Report.

Reviewer Comments Met Requirements Did Not Meet Requirements

NA- The Emery Deep Mine has been idle since December 2010. As such, active mining operations did not occur during 2016. However; with the Emery No. 2 Mine in current development, if second mining were to be approved by the Division and occur at the mine, this information will be required in subsequent annual reports.

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

N/A for 2016, no new monitoring points established. Underground mining operations have been idle with no production since 12/17/10.

Reviewer Comments Met Requirements Did Not Meet Requirements

NA- The Emery Deep Mine has been idle since December 2010. As such, active mining operations did not occur during 2016. However; with the Emery No. 2 Mine in current development, if second mining were to be approved by the Division and occur at the mine, this information will be required in subsequent annual reports.

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

N/A for 2016, no new monitoring points established. Underground mining operations have been idle with no production since 12/17/10.

Reviewer Comments Met Requirements Did Not Meet Requirements

NA- The Emery Deep Mine has been idle since December 2010. As such, active mining operations did not occur during 2016. However; with the Emery No. 2 Mine in current development, if second mining were to be approved by the Division and occur at the mine, this information will be required in subsequent annual reports.

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

Refer to Appendix B-4 for the Emery Town Well Report dated 1/15/2015.

Reviewer Comments Did Not Meet Requirements Met Requirements

The Permittee provided the Emery Town Well 2016 update in Appendix B-4. Subsequent review of the information will occur through the quarterly water monitoring process.

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

These sites have not been undermined at this time.

Reviewer Comments Met Requirements Did Not Meet Requirements

NA- The Emery Deep Mine has been idle since December 2010. As such, active mining operations did not occur during 2016. However; with the Emery No. 2 Mine in current development, if second mining were to be approved by the Division and occur at the mine, this information will be required in subsequent annual reports.

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 for years 2014, 2015 and 2016

Reviewer Comments Met Requirements Did Not Meet Requirements

The Permittee provided the 2016 Annual Water Monitoring Summary in Appendix B-6. Subsequent review of the information will occur through the quarterly water monitoring process.

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

OPERATOR COMMENTS (OPTIONAL)

REVIEWER COMMENTS

NA

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

NA

