




**PERMIT INFORMATION**

<b>Permit Number:</b> C-1981-028 <b>Mine Name:</b> Keenesburg Strip Mine <b>Operator:</b> Coors Energy Company <b>Operator Address:</b> Mr. Danny Kipp P.O Box 467 Golden , CO 80402	<b>County:</b> Weld <b>Operation Type:</b> Surface <b>Permit Status:</b> Active <b>Ownership:</b> Private
	<b>Operator Representative Present:</b>  Danny Kipp
<b>Operator Representative Signature: (Field Issuance Only)</b>  	

**INSPECTION INFORMATION**

<b>Inspection Start Date:</b> August 14, 2018 <b>Inspection Start Time:</b> 09:30 <b>Inspection End Date:</b> August 14, 2018 <b>Inspection End Time:</b> 14:00		<b>Inspection Type:</b> Coal Partial Inspection <b>Inspection Reason:</b> Normal I&E Program <b>Weather:</b> Cloudy	
<b>Joint Inspection Agency:</b>  None		<b>Joint Inspection Contacts:</b>  	
<b>Post Inspection Agency:</b>  None		<b>Post Inspection Contacts:</b>  	
<b>Inspector(s):</b>  Janet H. Binns  Robert D. Zuber, P.E.	<b>Inspector's Signature:</b>  		<b>Signature Date:</b>  8/15/2018

**Inspection Topic Summary**

NOTE: Y=Inspected N=Not Inspected R=Comments Noted V=Violation Issued NA=Not Applicable

N - Air Resource Protection

N - Availability of Records

R - Backfill &amp; Grading

NA - Excess Spoil and Dev. Waste

NA - Explosives

N - Fish &amp; Wildlife

R - Hydrologic Balance

Y - Gen. Compliance With Mine Plan

N - Other

NA - Processing Waste

N - Roads

R - Reclamation Success

R - Revegetation

NA - Subsidence

N - Slides and Other Damage

N - Support Facilities On-site

N - Signs and Markers

NA - Support Facilities Not On-site

NA - Special Categories Of Mining

N - Topsoil

**COMMENTS**

The weather was partly cloudy and warm. The ground was dry. The inspection predominantly entailed discussion of the vegetation monitoring plan, discussion of success criteria for re-vegetation of reclaimed areas (aka parcels), observation of vegetation monitoring techniques, and inspection of the vegetation in parcels that are being sampled.

DRMS inspectors included Janet Binns (an expert on re-vegetation for mine reclamation in Colorado) and Rob Zuber. Also on site were Danny Kipp of Coors Energy Company (CEC) and Robin Bay, a consultant with Habitat Management, Inc.

The vegetation sampling on reclaimed parcels will be used for Phase II and Phase III bond release applications in coming months or in 2019, per Mr. Kipp. He noted that a bad hail storm in 2017 precluded sampling that year. The following table provides some details on the areas slated for sampling this week by Habitat Management for CEC.

Area	Acreage (acres)	Planned Bond Release Phase	Comments
23	0.67	Phase III	Year 9 sampling done in 2016
25	12.6	Phase II	
29	8.3	Phase III	Year 9 sampling done in 2016
30	9.68	Phase II and III	
31	11.89	Phase II and III	
32	5.54	Phase II	
33	12.46	Phase II	Phase I pending
34	6.92	Phase II	Phase I pending
Total	68.06		

Number of Partial Inspection this Fiscal Year: 2Number of Complete Inspections this Fiscal Year: 0

In the office, Ms. Bay offered the following details regarding her vegetation sampling approach:

- For each parcel, an even grid with 15 sampling points was developed on a map.
- Transects are 25m long.
- Quadrats are circular and 0.5 square meter in area.
- The azimuth for a given transect was randomly selected. If using that direction is problematic (it would take the transect out of the parcel), an azimuth in the opposite direction will be used.
- Areas 23 and 29 will be combined into a single sampling area. This will be done because Area 23 is very small, and the two areas were seeded in the same approximate time period (2002 – 2003).

Janet Binns found the sampling plan to be generally adequate. She did inform CEC and Ms. Bay that interim sampling and sampling for bond release applications have different requirements (per the DRMS Rules and per the Keenesburg PAP). She also told them that 30 sampling points will be needed within each parcel for a future Phase III application to meet the requirements related to the productivity standard. Ms. Bay was planning on 15 points. Janet also discouraged the combining of Areas 32 and 33, because they have significant differences (topsoil depths are different, uses were different – pit versus spoil area).

It was agreed between Ms. Bay and Ms. Binns that production sampling only needs to be separated by annuals and perennials. Annual forbs and annual grasses can be lumped together. Similarly, perennial grasses and perennial forbs can be lumped together. However, noxious species, woody species, and cacti will not be included in herbaceous production.

Ms. Bay and Ms. Binns discussed the possibility of a Technical Revision (TR) to the Keenesburg Mine permit related to vegetation success criteria. It could include changes to requirements for the cool season diversity standard and to the requirement for forbs within the reclamation. This potential TR will require further discussion between the relevant parties.

Related information can be found in the REVEGETATION section below.

#### BACKFILL and GRADING – Rule 4.14

Contemporaneous Reclamation 4.14.1; Approximate Original Contour 4.14.2; Highwall Elimination 4.14.1(2)(f); Steep Slopes 4.14.2, 4.27; Handling of Acid and Toxic Materials 4.14.3; Stabilization of Rills and Gullies 4.14.6:

During the inspection, no backfill or grading operations were taking place. The spoil pile is comparable in size (appearing to be essentially identical) than in recent months, because CEC has had mechanical issues with their scraper.

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**HYDROLOGIC BALANCE - Rule 4.05**

Drainage Control 4.05.1, 4.05.2, 4.05.3; Siltation Structures 4.05.5, 4.05.6; Discharge Structures 4.05.7, 4.05.10; Diversions 4.05.4; Effluent Limits 4.05.2; Ground Water Monitoring 4.05.13; Surface Water Monitoring 4.05.13; Drainage – Acid and Toxic Materials 4.05.8; Impoundments 4.05.6, 4.05.9; Stream Buffer Zones 4.05.18:

Standing water was observed in Sediment Pond 2 and the Dugout Pond. Neither pond was discharging during the inspection. No problems were observed with the two ponds. The Sediment Pond 2 spillway was not closely observed, but the water level (observed from the south side of the pond) indicated no discharge. The water in the Dugout Pond was lower than in previous months.

Danny Kipp indicated that the last storm prior to the inspection was on 7 August 2018.

**RECLAMATION SUCCESS - Rule 4.15, Rule 3:**

No issues were seen at the old B-Pit area or the Long-Term Spoil Area.

**REVEGETATION – Rule 4.15**

Vegetative Cover; Timing:

Robin Bay began the 2018 vegetation sampling work on 13 August 2018, the day prior to the inspection. She stated that her work on the 13th was at Area 25, and she began field work at the same parcel on the 14th.

In the field, Ms. Bay offered the following details regarding her vegetation sampling approach. She uses a software called “Data Point” to record her results. At every meter along each transect, she is using two laser pointers (one meter apart) to assess the vegetation.

The following areas were inspected by Binns, Zuber, and Kipp (Bay was observed for a short time but was left to do her work): 25, 32, 31, 23, 33, and 34 (in chronological order). In general, all areas have good to excellent cover with several desirable species of grasses. These include (but are not limited to) sand bluestem, little bluestem, prairie sandreed, Indian ricegrass, sideoats grama, blue grama, Western wheatgrass, switchgrass, and sand dropseed. The lack of perennial forbs was noted by Janet in most areas. Many plants have been impacted by the large number of grasshoppers at the mine.

Of particular note to Area 25, the area has seen significant progress in past years. It had been a parcel without successful vegetation growth and was reseeded in 2012 and interseeded in 2014. Sand dropseed was the visually dominant species in this parcel.

In Area 29, the grasses are not as robust, but this area appears to have more forbs than many other areas.

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Number of Complete Inspections this Fiscal Year: 0

### **ENFORCEMENT ACTIONS/COMPLIANCE**

No enforcement actions were initiated as a result of this inspection, nor are any pending.

### **PHOTOGRAPHS**



**Area 25**



**Area 32**

Number of Partial Inspection this Fiscal Year: 2

Number of Complete Inspections this Fiscal Year: 0



**Area 31**



**Area 30**

Number of Partial Inspection this Fiscal Year: 2

Number of Complete Inspections this Fiscal Year: 0





**Area 29**



**Area 23**

Number of Partial Inspection this Fiscal Year: 2

Number of Complete Inspections this Fiscal Year: 0



**Area 33**



**Area 34**

Number of Partial Inspection this Fiscal Year: 2

Number of Complete Inspections this Fiscal Year: 0