# COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY
# COAL PROGRAM INSPECTION REPORT

## PERMIT INFORMATION

| | |
|---|---|
| **Permit Number:** C-1996-084<br>**Mine Name:** Lorencito Canyon Mine<br>**Operator:** New Elk Coal Company, LLC<br>**Operator Address:**<br>Mr Ron Thompson<br>12250 Highway 12<br>Weston, CO 81091 | **County:** Las Animas<br>**Operation Type:** Surface<br>**Permit Status:** Permanent Cessation<br>**Ownership:** Private |
| | **Operator Representative Present:**<br><br>Ron Thompson |
| **Operator Representative Signature: (Field Issuance Only)** | |

## INSPECTION INFORMATION

| | |
|---|---|
| **Inspection Start Date:** July 23, 2013<br>**Inspection Start Time:** 12:48<br>**Inspection End Date:** July 24, 2013<br>**Inspection End Time:** 16:30 | **Inspection Type:** Coal Complete Inspection<br>**Inspection Reason:** Normal I&E Program<br>**Weather:** Clear |
| **Joint Inspection Agency:**<br><br>None | **Joint Inspection Contacts:** |
| **Post Inspection Agency:**<br><br>None | **Post Inspection Contacts:** |

| **Inspector(s):** | **Inspector's Signature:** | **Signature Date:** |
|---|---|---|
| Leigh D. Simmons<br><br>Daniel I. Hernandez |  | August 7, 2013 |

**Inspection Topic Summary**
NOTE: **Y**=Inspected **N**=Not Inspected **R**=Comments Noted **V**=Violation Issued **NA**=Not Applicable

**NA** - Air Resource Protection
**Y** - Availability of Records
**NA** - Backfill & Grading
**R** - Excess Spoil and Dev. Waste
**NA** - Explosives
**Y** - Fish & Wildlife
**R** - Hydrologic Balance
**R** - Gen. Compliance With Mine Plan
**R** - Other
**NA** - Processing Waste
**R** - Roads
**N** - Reclamation Success
**R** - Revegetation
**NA** - Subsidence
**NA** - Slides and Other Damage
**NA** - Support Facilities On-site
**Y** - Signs and Markers
**NA** - Support Facilities Not On-site
**NA** - Special Categories Of Mining
**Y** - Topsoil

## COMMENTS

This was a complete inspection by Leigh Simmons and Dan Hernandez of Colorado Division for Reclamation, Mining and Safety, (the Division). The inspectors were accompanied by Ron Thompson of New Elk Coal Company, (NECC). The weather was fine. The area had received several rainstorms, on the order of the 10y/24hr event, over the preceding few weeks.

Consistent with the format of recent inspection reports, items needing action will be highlighted **using bold text**. Where possible, these items should be addressed before the next inspection.

Several permitting actions are in progress, these are detailed under the heading GENERAL MINE PLAN COMPLIANCE.

EXCESS SPOIL and DEVELOPMENT WASTE – Rule 4.09
Placement; Drainage Control; Surface Stabilization:

Fills 7, 8 and 9 were inspected. They appeared well drained and stable. Vegetation on the fills was encouraging.

On Fill 9 there was no significant erosion on any of the faces or benches. The armored down-drain on the east side was in excellent shape, with plants growing between the rip-rap. The down-drain on the west side of the fill had some erosion, particularly at the end of the contour ditch, but also lower down. **The erosion should be repaired**; Mr Thompson suggested that this could be done by the end of September. The channel was obviously re-routed many years ago; **NECC should verify that the structure on the ground matches the design in the permit**.

Fill 7 was in good shape, with no significant erosion. A little water had ponded in a couple of the contour ditches, but had not overflowed. It would advisable for NECC to remove some of the sediment from these ditches to ensure that no water is allowed to cascade down the face of the fill.

On fill 8, the rills that had been identified in the report of April 29, 2013, on the lower faces were inspected. There had been no additional damage, despite the several intense rainstorms. This suggests that the area is longer actively eroding. Repairs are not required at the moment, however the area should continue to be monitored. Water had ponded in two places on the benches, but had not breached. The erosion outside of the

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

down-drain east of fill 8 that was noted in the report of April 29, 2013, had grown larger and vegetation had been washed out of the soil. **This area should be repaired and some flow control structures should be used to protect the repairs**.

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:

Pond 9B was discharging. The discharge was quite "murky", but had not yet been sampled. Both spillways were in good order, although the weir box on the primary spillway was partially full. Some work had been done to clear the sediment from around the primary spillway riser, but the recent heavy rain had largely undone the work. At the time of the inspection the water level was above the height of the weep-holes. **When conditions allow, the sediment around the riser should be cleared**. Immediately surrounding the pond were 3 gullies. The first two were actively eroding topsoil, but the third, which was much larger, had cut to bedrock along the lower section. **The first two should be repaired. Repair may not be appropriate in the third, but it should certainly be monitored with great care since it could undermine the road if it were to continue to erode**.

Pond 9A was discharging. It had not been sampled, but again the discharge appeared cloudy. No problems were observed with the spillways or embankments.

Pond 7 was barely discharging. No problems were observed with the spillways or embankments. Above the pond, west of the fill, the side ditch had filled with sediment and had breached in several places. Further erosion had been caused down the slope from the breaches. **The erosion and the ditch should be repaired**.

Pond 6 was discharging. The spillways and embankment were in good order. Flow control measures outside had been effective, but had been damaged by the recent heavy rain. **The flow control measures should be repaired**. Above pond 6 the recently placed rock-check dams and straw bales had caught a lot of sediment and were full up. **The sediment should be removed and the structures repaired**. Further up, the steep slope is a problem that needs a long term solution to allow the establishment of vegetation. A contour ditch could be difficult to fit it, but would be worth investigating; straw wattles may be easier to implement - in either case, **considerable repair and maintenance is needed if the slope is ever to meet the criteria for bond release**.

On the west side of the "nob" the upper section of the contour ditch held quite a bit of silt, but had not breached. **Straw bales in the ditch should be replaced**.

The east facing slope to the west of the shrub plot had some significant gullies. Earlier hydro-mulched repairs have eroded away after only 1 year. The problem appears to be caused by run-off from the road above. **The gullies should be repaired again and some sort of flow control should be used to prevent the same problem recurring**.

Pond 8 was discharging. No problems were observed with the spillways or embankments.

Pond 5 was just discharging. At the flat area (potential SAE) at the head of the pond 5 drainage the armoring and flow control measures had worked very well during the recent heavy rain. **The bales just need to be "touched up" a little**.

On the north east side of the "nob" the contour ditch was full of sediment. **The ditch should be cleaned out**. The lower 1/3 of the slope above showed extensive erosion, including previously repaired gullies that had re-opened. **The erosion should be repaired and some flow control device should be used to reduce the slope length and reduce flow velocity**.

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

**The outlet of the culvert marked C4 on the draft map should be cleared**. C5, C6 and C7 were in good shape. **C8 was mis-located on the draft map**. C9, C10, C11, and C12 were good. **C13 was not shown on the draft map**. C14, C15, C16, C17 and C18 were good. A gully had formed in the ditch above C18. **The gully should be repaired**. **Two culverts on the road to pond 9B were missing from the draft map submitted for RN3**.

GENERAL MINE PLAN COMPLIANCE:

Lorencito Canyon continues to be maintained in compliance with the permit and the regulations. However the site is subject to extended droughts and occasional intense rain events; establishment of vegetation and control of erosion are perennial problems, which demand attention. NECC may be well advised to consider sampling vegetation in order to establish progress towards the standards needed for bond release.

At present two permitting actions are progress:

- RN3 - The Division is awaiting a response to the adequacy letter of July 16, 2013
- TR18 - The Division is awaiting a response to the adequacy letter of May 29, 2013

As noted in previous inspection reports, identification of the important features at the Lorencito Canyon site is a difficult task, exacerbated by the lack of a complete map or maps. This problem is being addressed by the permit renewal process (RN3).

The map(s) must clearly identify all features, but in particular:

- Roads and culverts that NECC is responsible for, and those that are maintained by third parties.
- Ponds, as identified on the NPDES permit (what has been referred to as "pond 9" in the DRMS permit is apparently "pond 9b" in the NPDES permit)

Until the permit renewal process is completed, map 1 from the 2008 Annual Reclamation Report will be used for reference.

OTHER (SPECIFY):

Methane was bubbling from the ground, in the water in the natural drainage adjacent to that leading to pond 5 (outside the area disturbed by the mine). About 1/4 of a mile reach of the stream was completely barren of vegetation where the methane had caused a die-off. Anecdotally, the vegetation die-off was coincident in time with the fracking activity of XTO and Pioneer.

ROADS – Rule 4.03

Construction 4.03.1(3)/4.03.2(3); Drainage 4.03.1(4)/4.03.2(4); Surfacing and Maintenance 4.03.1(5) and (6)/4.03.2(5) and (6); Reclamation 4.03.1(7)/4.03.2(7):

All roads were passable and in good condition.

REVEGETATION – Rule 4.15

Vegetative Cover; Timing:

Around the site, vegetation looked far better than at any time in the last year. The shrubs showed good growth and grass had grown in healthy clumps, although had not yet filled in.

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

The shrub transplants in the fenced plot had survived with mixed success. Utah serviceberry, *Amelanchier utahensis*, and Mountain sumac, *Rhus glabra*, were observed. Some Tamarisk was also observed in the shrub plot area, in flower. **Tamarisk is a List B noxious weed and should be controlled**.

SIGNS AND MARKERS – Rule 4.02:

Mine ID signs have been temporarily altered to bring them into compliance. **New signs, or permanent alterations, are needed**.

Rule 4.02 discusses signs and markers. In particular:

- 4.02.1(2) *Signs and markers shall be of uniform design throughout the operation that can easily be seen and read*
- 4.02.2(1) *Identification signs shall be displayed at each entrance to the permit area from public roads*
- 4.02.2(2) *Signs shall show the name address, and telephone number of the person who conducts the surface coal mining operations and the identifying number of the current permit authorizing mining activities*

Rule 4.30.2 discusses permanent cessation, in particular:

- 4.30.1(2) - *When surface or underground mining and reclamation activities have permanently ceased, the operator shall modify the mine identification sign; to include the name, address, and telephone number of the Division office where the mining and reclamation permit is filed; until the Division has terminated jurisdiction over the surface coal mining operation.*

**DOCUMENTS RECEIVED**

N/A

**OTHER (SPECIFY)**

N/A

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

## ENFORCEMENT ACTIONS/COMPLIANCE

No enforcement actions are necessary at this time.

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

## PHOTOGRAPHS

Photo 1: Mine ID sign


Photo 2: Pond 9B


Photo 3: Pond 9B weir box


Photo 4: Pond 9B primary spillway riser


Photo 5: Pond 9B, first gully (1)


Photo 6: Pond 9B, first gully (2)

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1


Photo 7: Pond 9B, second gully (1)


Photo 8: Pond 9B, second gully (2)


Photo 9: Pond 9B, third gully (1)


Photo 10: Pond 9B, third gully (2)


Photo 11: Excellent east down-drain on fill 9


Photo 12: West down-drain on fill 9 needing repair (1)

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1


Photo 13: West down-drain on fill 9 needing repair (2)


Photo 14: Pond 9A


Photo 15: Pond 9A riser


Photo 16: Pond 9A discharge


Photo 17: Pond 7 discharge


Photo 18: Pond 7

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1


Photo 19: Contour ditch west of fill 7 to be cleaned (1)


Photo 20: Contour ditch west of fill 7 to be cleaned (2)


Photo 21: Erosion caused by breach of ditch shown in 19 & 20


Photo 22: Breach of ditch between ponds 7 and 6


Photo 23: Erosion caused by breach shown in 22


Photo 24: Pond 6

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1


Photo 25: Pond 6 discharge


Photo 26: Erosion next to pond 6 emergency spillway (1)


Photo 27: Erosion next to pond 6 emergency spillway (2)


Photo 28: Erosion next to pond 6 emergency spillway (3)


Photo 29: Erosion next to pond 6 emergency spillway (4)


Photo 30: Accumulated sediment above pond 6 (1)

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1


Photo 31: Accumulated sediment above pond 6 (2)


Photo 32: Accumulated sediment above pond 6 (3)


Photo 33: Accumulated sediment above pond 6 (4)


Photo 34: Steep slope above pond 6, showing erosion (1)


Photo 35: Steep slope above pond 6, showing erosion (2)


Photo 36: Steep slope above pond 6, showing erosion (3)

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1


Photo 37: Steep slope above shrub plot, showing erosion


Photo 38: Close up of erosion in 37


Photo 39: Road run-off causing erosion in 38


Photo 40: Tamarisk in shrub plot


Photo 41: Fill 8


Photo 42: Pond 8

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

Photo 43: Pond 8 discharge

Photo 44: Erosion outside of fill 8 (1)

Photo 45: Erosion outside of fill 8 (2)

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1


Photo 46: Flow control above pond 5


Photo 47: Pond 5


Photo 48: Pond 5 discharge


Photo 49: Sediment in contour ditch north east of “nob”


Photo 50: Erosion north east of “nob” (1)


Photo 51: Erosion north east of “nob” (2)

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

Photo 52: Bubbling methane in natural drainage

Photo 53: Vegetation die-off caused by methane

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1

# AVAILABILITY OF RECORDS

| PERMIT RECORDS | |
|---|---|
| DRMS Permit | Expires 11/7/2012 |
| Permit Application w/Revisions | Binder 1 |
| Findings Document | MT3, 2010 |
| Insurance Certificate | Expires 9/23/2013 |
| Bond Document | $927,121.00 |
| Phased Bond Release Documents/Findings | SL2 |
| Air Emission Permits | 01PO0896 |
| County Special Use Permits | SUP-01-020 |
| UG Mining Landowner Notification | n/a |
| Subsidence Monitoring Reports | n/a |
| Subsidence Monitoring Data | n/a |
| Rill & Gully Survey | n/a |
| Vegetation Monitoring Data | |
| Specific Variance Approvals | n/a |
| Annual Reclamation Reports | 2012 |
| Midterm Review Documents | 5/7/2010 |
| DRMS/OSM Inspection Reports/Enforcement Actions | Through 6/2013 |
| Transfers/Succession of Operator | Binder 1, 4/8/2008 |
| Temporary Cessation Notification | n/a |
| Reclamation Cost Estimate | MT3, 2010 |
| **CERTIFICATIONS** | |
| Pond Certifications | Exhibit 15 |
| Annual Certifications for Impoundments | 2010 *1 |
| Fill Certifications for Excess Spoil or Underground Development Waste | |
| • Quarterly Inspections | Q2 2013 |
| • Compaction Testing | |
| • Final Certification | |
| Coal Processing Waste Banks | n/a |
| Haul Road Certifications | n/a |
| Access Road Certifications | n/a |

| HYDROLOGIC RECORDS | |
|---|---|
| NPDES Permit | Exhibit 21, COG850044*2 |
| NPDES Records | Q2 2013 |
| Stormwater Management Plan | 2007 (part of NPDES permit) |
| SPCC Plan | n/a |
| MSHA Pond Inspections | n/a |
| State Engineer's Pond Inspection | n/a |
| Quarterly Pond Inspections | Q1 2013*3 |
| Annual Hydrology Reports | Terminated |
| • Ground Water Monitoring | |
| • Surface Water Monitoring | |
| • Spring & Seep Monitoring | |
| • Mine Water Discharge Monitoring | |
| • Mine Inflow Study | |
| • Water Consumption Records | |
| Well Permits | 201451, 201453-201476 (compliance file) |
| **BLASTING RECORDS** | |
| Blasting Publication | n/a |
| Blasting Records (3 years) | n/a |
| ATFE Explosives Permit | n/a |
| Blasting Variances | n/a |
| Pre-Blast Surveys | n/a |
| **ADDITIONAL RECORDS (specify)** | |

COMMENTS:

*1 2011/12 certifications are expected by the end of August, 2013.
*2 Renewal applied for 5/14/2013
*3 **Q2 2013 pond inspections were not located – these must be available at the next inspection**

Number of Partial Inspection this Fiscal Year: 0
Number of Complete Inspections this Fiscal Year: 1