

Project Summary
2015 Lovejoy Avoca Coal Fire Emergency
Contract AM-720-15



Abandoned Mine Lands Division
600 East Boulevard Avenue, Department 408
Bismarck, ND 58505-0480

June 2015

North Dakota Public Service Commission 2015 Lovejoy Avoca Coal Fire Project Summary

Project Type:	Surface burning of coal screening near the entrance of an abandoned underground coal mine.	
Primary Location:	Section 10 T154N, R100W	Lat. 48.1779° Lon. -103.5269°
Project Dates:	June 3-10, 2015	
Contractor:	Earthworm Excavating of Tolna, ND	
Project Cost:	\$18,110	

The Public Service Commission administers the Abandoned Mine Lands (AML) Program on behalf of the State of North Dakota. The AML program is charged with eliminating existing and potential public hazards resulting from abandoned surface and underground coal mines. It is funded by a production tax on lignite coal mined in the state.

The 2015 Lovejoy Avoca Coal Fire Project was conducted to extinguish a dangerous coal refuse fire burning on an area of approximately 0.4 acres. The site is located about 4 miles east of Williston, north of ND State Highway 1805, near 131st Ave. NW (see map).

Standard requirements for work under this contract were as follows:

1. Remove and stockpile all available topsoil from around the affected area.
2. Excavate a trench or trenches to a depth several feet below the coal fines and into native soil materials. Save wet clay materials from the excavation.
3. Excavate and place the burning materials and coal fines in the trench(es), mixing them thoroughly with wet clay and quenching with water as needed. Ensure that all buried materials are isolated from other combustible materials.
4. Grade the areas to re-establish drainage and blend into adjacent topography.
5. Respread topsoil over the disturbed areas.
6. Till and reseed all disturbed areas.

The required seed mixture for native grassland areas consisted of the varieties and rates.

<u>Variety</u>	<u>Rate/Acre – Lbs. (PLS)</u>
Thickspike Wheatgrass	4
Sodar Streambank Wheatgrass	4
Revenue Slender Wheatgrass	2
Rosana Western Wheatgrass	2
Lodorm Green Needlegrass	2
Pierre Sideoats Grama	2
Forestburg Switchgrass	<u>2</u>
	20

This AML Project resulted in the extinguishing of a dangerous coal refuse fire. Coal refuse fires are a serious hazard primarily because they can burn for extended periods of time, and also ignite wildfires that can destroy property, damage the environment, and threaten the welfare of people nearby.

Report Contents

- Summary Data
- Map
- Emergency Investigation Report
- Captioned Photos

Cover Photo: The cover photo shows a D6 bulldozer pushing coal fines adjacent to burning pile, and in the background an excavator digging a pit for mixing of wet clay and burning coal screenings. June 3, 2015.

Coal Fire

-  Construction Area (0.39 Acres)
-  Avoca Mine Map (1922)

Mine Entrance

10

154N
100W

Exhausted



Lovejoy (Avoca) Coal Fire

T154N R100W Sec 10
Northeast of Williston, ND
Williams County
ND PSC AML Division
June 5, 2015



0 50 100
Feet

AML EMERGENCY INVESTIGATION

Type of Problem: Surface Burning/Coal Refuse Fire
Reported by: Lane Knudsen, Property Owner
Address: 5290 131st Ave. NW, Williston, ND 58801
Telephone: 701-770-1849
Date Complaint Received: May 7, 2015
Person Notified of Complaint: Jim Deutsch, NDPSC
Address of Complaint: Approximately 4 miles east of Williston, ND
City: Williston
County: Williams
State: North Dakota

Site Investigation

Date: May 13, 2015
Time: 10:45-12:30pm Central Time
Name of State Investigators: Bill Dodd, Matt Fischer, and Preston Ripplinger, AML Division
OSM Representative(s) Present: None
Others Present: Lane Knudsen (Landowner), and Jeremy Myers (Rural Fire Dept.)
Name of others contacted: Williston Emergency Manager, Williston Rural Fire Protection Dist. #1
(Local, State, Federal, Utilities, etc.)

LOCATION OF SITES

Directions of locations (Describe Route):

Approximately 4 miles Northeast of Williston, North Dakota, off of State Highway 1804 on 131st Ave NW, in the SW1/4 of the NE1/4, Section 10, T154N, R100W.

USGS Quadrangle Name: Williston East
Coordinates: 48.177947° -103.527012

MINE INFORMATION

Mined by: Avoca Coal Mine (The Avoca Coal Co.)
Duration of Mining: 1913-1947
Type of Mining: Underground
Seam Name: Unknown
Thickness of Seam: Two separate seams each approx. 10 ft. thick

CONTINUING RECLAMATION RESPONSIBILITY

Permitted Operation: No **Permit Number(s):** N/A
Bond Status: Returned, Forfeited, Available: N/A
Amount: N/A
Date: N/A

PRESENT OWNER(S)

Surface Owner's Name: Lane Knudsen
Address: 5290 131st Ave. NW, Williston, ND 58801
City: Williston
State: North Dakota
Zip Code: 58801
Telephone: 701-770-1849
Were the Property Owners Involved in the Mining: No
Date Property Acquired by Owner: 2003
If Potential Subsidence, Do Owners Have Insurance: No
Mineral Owner's Name: Unknown

AFFECTED PARTIES

This fire is located approximately 4 miles northeast of Williston, ND in the SW1/4 of the NE1/4, Section 10 T154N, R100W. It is less than a ¼ mile from the landowner's house, and less than ¾ mile NNW of an active oil well. If given the chance to ignite another wild fire it could affect the safety of nearby farms, traffic along the road and state highway, as well potentially starting an oil fire.

SITE INFORMATION

Date that problem began or was first noticed: 2013

Is there any active mining or related activities in or around the area: No

Name of Operator(s): N/A

Nature of problem:

Surface Burning/Underground Burning

Source of problem:

Underground Mine Coal Screenings

POTENTIALLY AFFECTING:

Persons: Estimated Number: 5+

Housing: Yes

Building: Yes

Estimated acres affected: The present extent of this coal refuse fire is about 0.25 acres.

PROBLEM DESCRIPTION

Describe the problem (Detail: size, shape; is problem spreading, expanding; first noticed, etc.)

In May, Jim Deutsch and Bill Dodd were notified of a potential Coal Fire northeast of Williston, and set up a meeting with the Land Owner (Lane Knudsen), and the rural Fire Dept. (Jeremy Myers) for May 13th at 11:00 am.

Bill Dodd, Matt Fischer, and Preston Ripplinger met with Lane Knudsen (landowner), and Jeremy Myers (Rural Fire Dept.) from 11:00 am to 12:30pm and inspected the problem site.

According to Knudsen, the coal refuse fire was ignited two years earlier from a spark from the adjacent railroad tracks that started a grass fire across the pasture and eventually ignited the exposed area of coal refuse, near the coal chute of the Avoca Mine. The area has been of repeated concern for the landowner and the rural fire department, which have needed to put out subsequent grass fires near this coal fire many times. The frequency for ignition of fires resulting from the burning coal is increasing, and due to an abnormally dry year, has the potential for greater damage than before.

The area of coal refuse that is actively burning is only about 0.25 acres, with the potential for more. The fire is burning at varying temperatures across the area from 500° to over 900° F. The land owner has been actively pumping water onto the site almost daily for several months with little effect to the burning coal refuse. This fire is a hazard to public safety.

The Rural Fire Dept. and the landowner have requested assistance to extinguish the fire as soon as possible.

OTHER INFORMATION

Describe any other information available and its location (i.e., maps, inspections, reports, etc.)

Mine maps and information for the Avoca mine are available at the AML Division Office.

ELIGIBILITY

Declaration of eligibility from State: ND Public Service Commission

Name: Bill Dodd, AML Assistant Director

Address: 600 E Blvd Ave., Dept. 408

City: Bismarck

State: North Dakota

Zip Code: 58505-0480

Telephone: (701)328-2251

Oral **Written** **Date** May 15, 2015

Eligible: **YES X** (an eligible site must be mine related, abandoned with inadequate reclamation prior to August 3, 1977, and no continuing reclamation responsibility.)

ADDED VALUE

It is doubtful that reclamation of this site will add significant value to the property. However, remedial action to eliminate the hazard will help protect the property owner and the public.

PROPOSED REMEDIAL ACTION:

- Remove and stockpile all available topsoil from around the affected area.
- Excavate a trench or trenches to a depth several feet below the coal fines and into native soil materials. Save wet clay materials from the excavation.
- Excavate and place the burning materials and coal fines in the trench(es), mixing them thoroughly with wet clay and quenching with water as needed. Ensure that all buried materials are isolated from other combustible materials.
- Grade the areas to re-establish drainage and blend into adjacent topography.
- Respread topsoil over the disturbed areas
- Till and reseed all disturbed areas.

ESTIMATED COST: \$15,000



Trenching in the area where the Coal Refuse has already burnt through. This was used for both burial of burning coal refuse, and to see total extent of depth of coal fines in area. The average burial depth was 8-10 feet deep, with average thickness of coal fines 3-5 feet.



Above: Dozer pushing hot ash into pile for burial, average temperature 500°.

Below: Historical pieces were set aside on a terraced area.





Above: Moving burning materials into pit, where it was mixed with wet clay and buried. Photo date June 4, 2015

Below: Nearing completion, final mixing of coal refuse that hadn't been burnt yet by excavator while dozer pushes topsoil across area on June 5, 2015





This shows the site when all work was completed. It was graded with swale on top and terraced bottom. The total disturbed and seeded area was 0.87 acres and the final contract cost was \$18,110.