

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fall of Face Accident  
November 4, 2013

MC #1 Mine  
M-Class Mining, LLC  
Macedonia, Franklin County, Illinois  
I.D. No. 11-03189

Accident Investigators

Harry Wilcox  
Coal Mine Safety and Health Inspector

Michael Tite  
Coal Mine Safety and Health Inspector

David Minor  
Coal Mine Safety and Health Inspector

Steven M. Miller  
Supervisory Coal Mine Safety and Health Inspector

Originating Office  
Mine Safety and Health Administration  
District 8  
2300 Willow Street  
Vincennes, Indiana  
Robert A. Simms, District Manager

## TABLE OF CONTENTS

OVERVIEW.....	1
GENERAL INFORMATION .....	2
DESCRIPTION OF THE ACCIDENT .....	3
INVESTIGATION OF THE ACCIDENT .....	5
DISCUSSION .....	6
<u>Accident Scene</u> .....	6
<u>Equipment</u> .....	6
<u>Testing and Examination</u> .....	7
<u>Previous Accidents</u> .....	7
<u>Training and Experience</u> .....	7
ROOT CAUSE ANALYSIS .....	9
CONCLUSION.....	10
ENFORCEMENT ACTIONS .....	11
Appendix A Drawing of Accident Scene .....	12
Appendix B Persons Participating in the Investigation .....	13
Appendix C Interview List.....	14
Appendix D Victim Information .....	15



Accident Scene Photograph Showing Coal and Cap Rock Between the Face and Front of the Longwall Panline

## OVERVIEW

On November 4, 2013, at approximately 1:50 p.m. (CST), Dallas Travelstead (victim), a Longwall Chief, was fatally injured when shoveling coal and loose rock between the coal face and the longwall panline. The accident occurred at the No. 123 shield on the South District 1, Headgate of the No. 2 Longwall. Travelstead received crushing injuries when a solid piece of coal and cap rock fell from the coal face, striking his mid to lower back, pinning him against the working face side of the panline.

The mine operator did not have effective policies, programs, procedures, or controls in place to protect miners from a fall of the longwall roof or face while miners are positioned on the panline or between the panline and the longwall face.

## GENERAL INFORMATION

The MC#1 Mine, Mine I.D. 11-03189, is located near Macedonia, Franklin County, Illinois, and is operated by M-Class Mining, LLC. Coal is mined from the Herrin No. 6 coal seam, which averages 6 feet in height and has a depth-of-cover of 900 feet. At the time of the accident, the mine employed 218 personnel. The mine works five days per week, operates two production shifts each day, and produces an average of 33,000 tons of raw coal per day.

The mine has a dual-purpose slope. One side of the slope is used as a roadway to transport miners and materials into and out of the mine. A conveyor belt is installed in the other side of the slope for transporting coal out of the mine. The mine is ventilated with one blowing main mine fan and two exhausting main fans, which are connected to the mine via vertical shaft openings from the coal seam to the surface. One exhausting fan ventilates the South District 1, longwall bleeder system, and another exhausting fan ventilates the longwall belt entry. The mine operates four mining sections. Three mining sections utilize continuous mining machines and shuttle cars for the development of longwall gate entries, and one section utilizes a longwall system consisting of a shearer, armored face conveyor (panline), stage loader, and 1200-ton capacity portable roof supports (shields). Coal is transported to the surface via a belt conveyor system.

The mine liberates 2,623,861 cubic feet of methane in a 24-hour period and is on a 5-day spot inspection schedule for excessive methane in accordance with Section 103(i) of the Mine Act.

The principal officers at this mine at the time of the accident were:

Anthony Webb..... President /General Manager  
Christopher England..... General Mine Manager  
Gabe Wheeler..... Longwall Production Coordinator  
Tim Kirkpatrick.....Safety Director

At the time of the accident, a regular (E01) safety and health inspection was in progress by the Mine Safety and Health Administration (MSHA). The previous regular safety and health inspection of the mine was completed on September 26, 2013. The Non-Fatal Days Lost (NFDL) injury incidence rate for the MC#1 Mine in 2012 was 2.86, compared to the National NFDL rate of 3.58.

## DESCRIPTION OF THE ACCIDENT

On November 4, 2013, the day-shift longwall crew arrived on the 004-0 mechanized mining unit (MMU) at approximately 7:30 a.m. Repairs were needed for a broken headgate cutter shaft on the longwall shearer. The crew repaired the shaft and then found a broken face control chain flight on the panline. The flight was replaced and the longwall day-shift crew began mining.

During mining on the previous midnight shift, the face side of the panline had tilted upward because coal and loose rock had collected under it, and the dayshift crew was going to try to level the panline. The day-shift crew operated the longwall shearer in the manual-cut mode to cut more clearance and level the panline.

After learning the coal and rock underneath the panline on the longwall had become worse, Travelstead traveled underground with Anthony Webb, President/General Manager; Brandon Murphy, Maintenance Coordinator-Viking Mine; Travis Brown, Longwall Coordinator for Viking; and Brian Helfrich, Joy Global Vendor, at approximately 10:30 a.m. The group traveled via pickup truck to the No. 2 Longwall. After arriving on the MMU, the group walked to the longwall face.

The previous shift had stopped mining and left the longwall shearer at the No. 80 shield. The day shift crew had mined with the shearer to the headgate and started to mine from the headgate to the tailgate when Travelstead and his group arrived on the face. Mining then continued to the tailgate again and back toward the headgate until the shearer was stopped at the No. 120 shield. During the pass from the headgate to the tailgate, a cutter shaft broke. The shearer was not able to proceed to the headgate due to insufficient clearance between the shields and shearer. This was because the panline had continued to pitch upward. The shearer was moved back toward the tailgate and was stopped at the No. 140 shield because the shields on the tailgate side of the shearer had been advanced.

The management group spread out along the face of the longwall to assess the conditions. After conferring with the group, Webb determined the clearance required for the shearer to pass under the shield tips was insufficient between No. 120 and No. 124 shields. The time was approximately 12:00 Noon. Production activities were halted on the longwall face and the panline was locked out of service. Travelstead and several other miners positioned themselves between the panline and the longwall face from No. 122 shield to No. 124 shield and started shoveling coal and loose rock on the face side of the panline.

At approximately 1:50 p.m., Travelstead was shoveling under the tip of shield No. 123 on the face side of the panline. Webb, England, Wheeler, and Murphy were shoveling in close proximity to Travelstead. Webb and England had stepped in the panline to take a break, when a solid piece of combined coal and cap rock fell from the coal face, striking Travelstead on his mid to lower back, pinning him against the face side of the panline. (See Appendix A, Drawing of Accident Scene.)

The fallen coal and rock from the accident measured approximately 4 feet 10 inches in length by 2 feet 3 inches wide and up to 24 inches thick. The weight of the fallen coal and rock was approximately 1 ton.

Jeremy McKinney, Bradley Parrish, Dakota Smith, Longwall Shearer Operators, and England immediately started working to remove the coal and rock from Travelstead. Webb called for an ambulance and then joined the rescue operation. Rescuers tried to use shovels as pry bars to remove the combined coal and rock, but it was too heavy. A portion of the material had to be broken off using a pick hammer. They were able to move enough material to allow the victim to be removed. Webb and England, both EMTs, removed Travelstead and Webb checked him for vital signs. No vital signs were detected. Webb and England immediately began CPR. The victim was placed on a backboard, transported off the longwall face, then placed in a pickup truck, and transported to the surface of the mine.

The truck transporting Travelstead from underground arrived at the surface area of the mine at approximately 2:20 p.m. Abbott Emergency Services (EMS) transported the victim to the Franklin County Hospital in Benton, Franklin County, Illinois. At 2:50 p.m., Travelstead was pronounced dead at the Franklin County Hospital emergency room.

## INVESTIGATION OF THE ACCIDENT

Gary Miles, Chief Engineer for MC #1 Mine, notified the MSHA Call Center at 2:04 p.m. on November 4, 2013, to report the accident. The MSHA Call Center notified the MSHA District 8 District Office of the accident at 2:14 p.m.

Argus Brock, Coal Mine Safety and Health Inspector, was at the mine conducting an inspection in the underground workings when he heard the message on the pager mine telephone concerning a serious accident on the longwall. Brock issued a 103(k) order at 2:10 p.m. to insure the safety of the miners. MSHA's Marion, Illinois field office supervisor, Steven Miller, was notified of the accident. Miller, along with Coal Mine Inspectors, Harry Wilcox, Michael Tite, and David Minor, immediately traveled to the mine. David Brown, MSHA Training Specialist, was also dispatched to the mine to assist in the investigation.

The accident investigation was conducted by MSHA in cooperation with the Illinois Department of Natural Resources, Office of Mines and Minerals (IDNR), and M-Class Mining, LLC personnel.

The accident investigation team traveled underground at approximately 5:20 p.m. to the accident site. Photographs, sketches, and relevant measurements were taken at the accident scene. Preliminary interview statements were obtained from persons having knowledge of the facts and circumstances concerning the accident.

Formal interviews were conducted by the accident investigators on November 6, 2013, at the Marion, Illinois Field Office. A list of the employees that participated in the accident investigation is listed in Appendix B.

## DISCUSSION

### Accident Scene and Location

The accident occurred between the longwall face and the panline at shield No. 123 on the South District 1, Headgate No. 2 Longwall section (MMU 004-0). The longwall face was aligned with spad (survey station) No. 4875, which was located in the belt entry.

When investigators arrived at the accident scene, Travelstead had been removed from the mine and transported to the Franklin County Hospital. The solid piece of coal and cap rock that had pinned Travelstead was lying on the face side of the panline.

During the accident investigation interviews, Webb, Parrish, McKinney, and Smith stated that prior to beginning work in the area, the longwall face appeared to not be taking weight, was without sloughage or cracks, and had no cracking or bumping sounds emanating from the coal face where the miners were shoveling. Other crew members were removing the cable handler on the shearer to provide additional clearance for the panline and the cutter shaft was replaced on the shearer.

On November 4, 2013, at the beginning of the midnight shift, the longwall crew operated the Joy Model 7LS2A shearer (shearer) in the memory-cut mode. Before the midnight shift, England called Christopher Morris, Longwall Foreman, and instructed him to run the longwall in the memory-cut mode. This was being done to calibrate the memory-cut parameters for the new cutting drum. In addition, Morris was told if the memory-cut mode did not operate properly, he was to change to the manual-cut mode. After the face had been mined with the shearer in the memory-cut mode for three passes, Morris, who was operating the shearer at the time, observed that the panline was incorrectly pitching upward and placed the shearer in the manual-cut mode. For the remainder of the midnight shift, the face was mined an additional two and one-half passes with the shearer in the manual-cut mode in an attempt to level the panline. This was done to create additional clearance. A pass for the longwall shearer is the head-to-tail or tail-to-head mining sequence. The panline continued to pitch up. During the latter part of the midnight shift, a cutter-drum shaft broke when the cutter drum struck a shield. The dayshift crew repaired the broken cutter-drum shaft at the beginning of their shift.

### Equipment

The equipment used to mine the longwall face is a radio remote-controlled Joy Model 7LS2A shearer, which can be operated in a manual-cut mode or a

memory-cut mode. The memory-cut system has functional limitations and requires the shearer operator to adjust the parameters for a correct mining height. The shearer cutter-drum ranging arm has positive mechanical stops that limit the vertical span the cutter drum can reach. The mine roof along the longwall face is supported by Bucyrus 2-meter, 1200-ton capacity shields, which can be operated in a manual mode or an automated mode. The coal is transported off the longwall face with a Bucyrus armored face conveyor and a Bucyrus stage loader, which can be moved in a manual mode or an automated mode in conjunction with the longwall shields.

#### Testing and Examination

The longwall shields were examined during investigation of the accident. Shields use pressurized hydraulic cylinders in conjunction with protective steel canopies to provide roof support along the longwall face. The normal operating cylinder pressures for each shield is 4,206 pounds per square inch (290 BAR) and the rated cylinder yield pressure is 7,542 pounds per square inch (520 BAR). A BAR is a metric measure of pressure. No irregularities or deficiencies were observed on the shields during the examination.

#### Previous Accidents

A review of the previous accidents and injuries for the MC #1 Mine shows that on September 17, 2013, there was one previous injury from fall of the longwall face. In that accident, the injured miner was inside the panline changing bits on the shearer, when coal rolled out of the face and struck the left foot of the miner. Two previous roof falls on the longwall blocked egress on the tailgate side of the longwall. These two roof falls occurred on March 31, 2011, and March 29, 2012.

#### Training and Experience

Travelstead had sixteen years of mining experience at underground coal mines and earned certifications for Illinois Mine Examiner on March 11, 2002, and Illinois Mine Manager on October 12, 2006. In addition, he was qualified by MSHA to perform electrical work at coal mines and certified by MSHA to perform respirable dust sampling.

Travelstead had previously worked at the Eagle Valley Mine, Willow Lake Mine, and Mach #1 Mine before going to work at the MC#1 Mine.

Inspection of the training records from the Mach #1 Mine indicated that Travelstead received annual refresher training for underground miners on July 28, 2012. Travelstead started working at the MC#1 Mine in April of 2013 and received experienced miner training on April 23, 2013. In addition, the victim received annual refresher training for underground miners on July 27, 2013, for

the MC#1 Mine. Citations that were non-contributory to the accident were issued for missing or incorrect information on the MSHA 5000-23 training forms. One citation was issued on December 5, 2013, for a violation of 30 CFR § 48.9 for not having the mine name or mine identification number on the 5000-23 form. Another citation was issued on December 5, 2013, for a violation of 30 CFR § 48.9 because a second 5000-23 form did not have the training properly documented according to the mine's training plan.

## ROOT CAUSE ANALYSIS

An analysis was conducted to identify the underlying cause of the accident that was correctable through reasonable management controls. Listed below are the root causes identified during the analysis and the corresponding corrective action implemented to prevent a recurrence of the accident:

**Root Cause:** The mine operator did not have effective policies, programs, procedures, or controls in place to protect miners from a fall of roof or the longwall face while miners are positioned on the panline or between the panline and the longwall face. Therefore, the miners were not adequately trained with regard to working on the panline or between the panline and the longwall face.

**Corrective Action:**

The mine operator submitted a roof control plan revision that details the required equipment, procedures, and precautions in order to level the longwall panline. The revision stipulates procedures for leveling the pan line, which include blocking the pan line from the shield side, removing material from under the pan line from the shield side, and undercutting the mine floor to allow the pan line to level properly. In addition, if any work is required between the pan line and the face, horizontal jacks will be installed to the face, the face will be scaled, the number of miners exposed will be limited, proper testing and examinations will be done, and a certified foreman will be present at all times. The affected miners were trained in the revised roof control plan requirements.

## CONCLUSION

The accident occurred because the mine operator did not have effective policies, programs, procedures, or controls in place to protect miners from a fall of roof or from the longwall face while miners are positioned on the panline or between the panline and the longwall face.

Approved By:



Robert A. Simms  
District Manager



Date

## ENFORCEMENT ACTIONS

1. Section 103(k) Order No. 8382559, an accident occurred at this operation on 11/4/2013 at approximately 14:00 on the South District 1, Headgate No. 2 Longwall section. This order is being issued to prevent the destruction of any evidence that would assist in investigating the cause or causes of the accident. It prohibits all activities at this entire mine site until MSHA has determined that it is safe to resume normal mining operations at this mine. Additionally, the mine operator is reminded of its obligations to prevent the destruction of evidence that would aid in investigating the cause or causes of the accident.
2. A 104(d)(2) order was issued for a violation of 30 CFR § 75.202(a): On November 4, 2013, at approximately 1:50 p.m., the Longwall Chief, was fatally injured while shoveling coal and loose rock between the coal face and the longwall panline at the No. 123 shield on the South District 1, Headgate, No. 2 section face (MMU 004-0). The victim received crushing injuries when a solid piece of coal and cap rock fell from the coal face, striking the victim. The coal and rock combination measured approximately 4 feet 10 inches long, by 2 feet 3 inches wide, and up to 24-inches thick.

Review of the MSHA database shows that this accident is the second accident and first fatality at this mine where a miner was struck by coal or rock that had fallen or rolled from the longwall face since September of 2013. There were two other reportable accidents, one on March 31, 2011 and one on March 29, 2012, where the longwall face fell or rolled out onto the panline. In both of these accidents, the rock and/or coal were of such large size as to affect passage of the miners off the tailgate end of the longwall face.

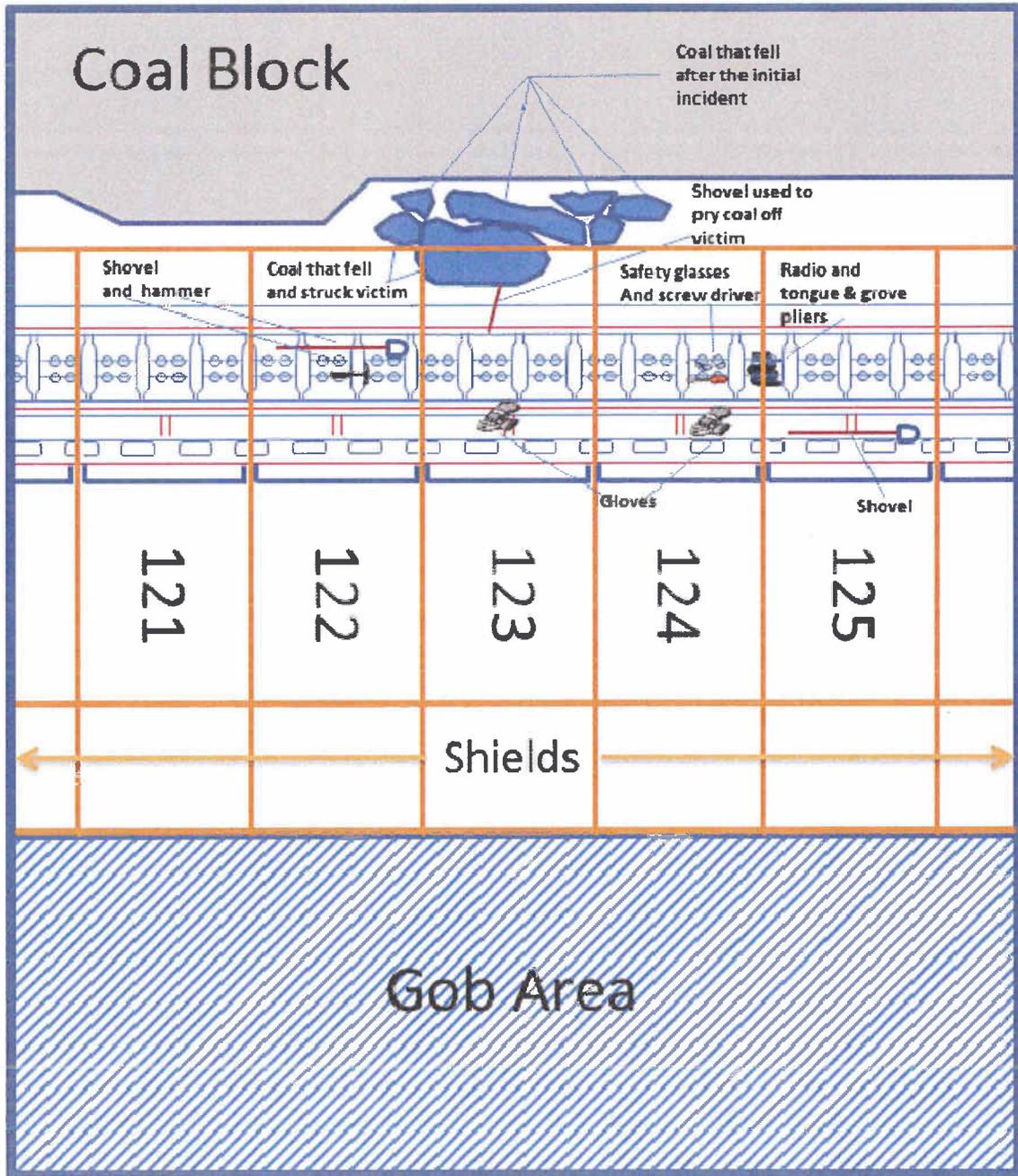
The mine operator failed to support or otherwise control the roof or face area of the longwall to protect persons from hazards related to falls of the roof or face while working between the longwall face and the panline.

The mine operator engaged in aggravated conduct constituting more than ordinary negligence when miners were allowed to work between the coal face and the longwall panline without any special precautions. This is an unwarrantable failure to comply with a mandatory standard.

Standard 75.202(a) was cited 8 times in two years at Mine 11-03189 (8 to this mine operator, 0 to a contractor).

# Appendix A

## Drawing of Accident Scene



Not to Scale

## Appendix B

### Persons Participating in the Investigation

#### Mine Safety and Health Administration

Steve Miller	Supervisory Mine Safety and Health Inspector
Harry Wilcox	CMS&H Inspector, Accident Investigator
David Minor	CMS&H Inspector
Michael Tite	CMS&H Inspector
Robert Bretzman	Special Investigator
David Brown	Training Specialist (EFS)

#### State of Illinois Department of Natural Resources, Office of Mines and Minerals

Tony Mayville	Director Office of Mines and Minerals
William Patterson	Inspector
John Gabby	Inspector

#### Management Personnel

Anthony Webb	President / General Manager
Christopher England	MC#1 Superintendent
Drexel Short	V.P. of Operations Forsight
Mickey Mangrum	Viking Portal Superintendent

#### Attorneys

Charles Little	Bailey and Glasser
Christopher Pence	Hardy and Pence

## Appendix C

### Interview List

Christopher Morris  
Jeremy Andrews  
Michael Murphy  
Jeremy McKinney  
Dakota Smith  
Bradley Parrish  
Brandon Murphy  
Gabriel Wheeler  
Christopher England  
Anthony Webb

Longwall Foreman  
Longwall Shearer Operator  
Longwall Shearer Operator  
Longwall Shearer Operator  
Longwall Shearer Operator  
Longwall Foreman  
Maintenance Coordinator Viking Mine  
Longwall Production Coordinator  
Mine Superintendent  
President Mach & M-Class Mining LLC

