FAI-6282349-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface
(Coal)

Fatal Powered Haulage Accident
October 19, 2021

Buckingham Mine
CCU Coal and Construction LLC
Glouster, Perry County, Ohio
ID No. 33-04526

Accident Investigators

Jeremy Doshen
Mine Safety and Health Inspector

Steven Ronyak
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
East Region - Morgantown District
604 Cheat Road
Morgantown, WV 26508
Carlos Mosley, District Manager

TABLE OF CONTENTS

OVERVIEW

On October 19, 2021, at approximately 1:50 p.m., David Steen, a 58 year-old mechanic with 17 years of mining experience, was fatally injured when the haul truck dump body fell and pinned him against the truck frame.

The accident occurred because the mine operator did not: 1) assure that the equipment was blocked against motion before the miner performed maintenance, and 2) train the miner on how to perform the task assigned to him.

GENERAL INFORMATION

CCU Coal and Construction LLC owns and operates the Buckingham Mine, a surface facility located in Glouster, Perry County, Ohio. CCU Coal and Construction LLC employs ten miners and operates one ten-hour shift, five days per week. The mine no longer produces coal. The mine operator's activities consist of slurry impoundment and abandonment work at an adjacent mine owned by the same company.

The principal officers for CCU Coal and Construction LLC at the time of the accident were:

Charles C. Ungurean	President/Chief Executive Officer
Gregory J. Honish	Vice President/Chief Operating Officer
Alan Call	Vice President/Chief Financial Officer

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on September 29, 2021. The 2020 non-fatal days lost incident rate

for the Buckingham Mine was zero, compared to the national average of 1.78 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On October 19, 2021, Steen started his shift at 6:00 a.m. and traveled to the belt shop, where his mechanic truck was located. Kevin Boyle, General Manager, assigned Steen the task of removing the steering jack and the suspension cylinder from the haul truck located near the belt shop. Around 1:40 p.m., Steen stopped Matthew McDonald, Safety Director, who was operating a water truck on the haul road and asked for assistance to remove a pin using a porta-power (a hydraulic jack used to apply force to vehicle parts). McDonald finished watering the haul roads, parked his water truck, and found Steen working on the frame of the haul truck. McDonald noticed that the truck bed was in the raised position and Steen had removed the bottom pin and partially removed the top pin from the suspension cylinder, but the top pin was stuck.

Steen was laying on the truck frame near the rear front tire on the right side of the truck. He was positioned between the truck frame and the dump body (see Appendix A). McDonald observed that the haul truck dump body and the metal support (arm) of the body prop assembly were raised. Steen asked McDonald to get him a hammer so Steen could strike the pin while McDonald operated the porta-power. McDonald began operating the porta-power and Steen began striking the pin. McDonald heard Steen strike the pin several times with the hammer and then heard a loud bang. McDonald looked up and saw the haul truck dump body falling onto Steen. Steen yelled for McDonald, who ran to the cab of the haul truck, started the engine, and used controls located in the cab to raise the dump body off Steen.

McDonald immediately called K. Boyle on his cellphone, who was with Ray Billingsley, Equipment Operator. McDonald called 911 at 1:58 p.m. K. Boyle and Billingsley traveled to the 900 Crossover to inform Daniel Boyle, Equipment Operator, of the accident. K. Boyle, Billingsley, and D. Boyle, who is also a certified Medical Mine Responder, traveled to the accident site. D. Boyle then climbed onto the haul truck frame to assess Steen's injuries. K. Boyle and McDonald traveled to get first aid supplies and a backboard from the mine office, and returned to the accident scene. D. Boyle began administering first aid as the Corning Fire Department EMS arrived at 2:09 p.m. EMS personnel climbed onto the haul truck frame to assess Steen and continued first aid with D. Boyle.

EMS personnel, D. Boyle, and Billingsley secured Steen to the backboard, and transferred Steen from the haul truck frame to a stretcher and into the ambulance. Corning Fire Department EMS transported Steen to the helicopter landing site. The Medflight Air Transport helicopter arrived at 2:31 p.m. Medflight Air Transport EMS personnel began to transfer Steen from the ambulance to the helicopter but were unable to detect a pulse and began cardiopulmonary resuscitation (CPR). At 3:07 p.m., Medflight Air Transport EMS personnel transported Steen to Genesis Hospital, where Seth Vensil, M.D., Muskingum County Coroner, pronounced Steen dead at 3:32 p.m.

INVESTIGATION OF THE ACCIDENT

On October 19, 2021, at 2:44 p.m., McDonald called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Michael Stark, Staff Assistant, who sent Jeremy Doshen, Mine Safety and Health Inspector; Steven Ronyak, Mine Safety and Health inspector; and Larry Johnson, Supervisory Mine Safety and Health Inspector, to the mine. Doshen arrived at 5:45 p.m., and Ronyak and Johnson arrived at approximately 7:30 p.m. Doshen issued an order under the provisions of Section 103(k) of the Mine Act to assure the safety of the miners and preservation of evidence.

MSHA's accident investigation team conducted an examination of the accident scene, interviewed mine operators and miners, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation in conjunction with the Ohio Department of Natural Resources – Division of Mineral Resources Management (ODNR-DMRM). Interviews were conducted on October 27, 2021, at the ODNR-DMRM Mine Rescue Station in Glouster, Ohio. See Appendix B for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred south of the belt shop, adjacent to the haul road (see Appendix C). The area was flat, dry, and covered with gravel.

Weather

The weather at the time of the accident was 71 degrees Fahrenheit with winds of six miles per hour. Investigators determined that weather did not contribute to the accident.

Equipment Involved

The haul truck involved in the accident was a Caterpillar D400E Articulated Haul Truck. The mine operator only used this haul truck in the event that another haul truck needed to be taken out of service. The haul truck involved had been out of service since October 8, 2021, for a transmission issue. While the haul truck was out of service, the mine operator decided to remove the steering jack and the suspension cylinder to send them out for repair.

The haul truck's body prop assembly consists of an arm attached to the haul truck frame and a socket on the underside of the dump body. The assembly is located on the right side of the haul truck near the rear front tire. When the dump body is in a raised position, the arm fits into the socket. The body prop assembly supports the dump body in conjunction with the hydraulic lift cylinders. Investigators determined that the arm was not properly aligned in the socket at the time of the accident. Investigators observed that the top of the arm was misaligned from the socket by one and one-half inches when the arm was fully upright (see Appendix D). The improperly aligned arm fell from either a hammer striking the arm, or a combination of the weight of the truck's dump body and the vibrations from Steen hammering the pin. The dump body fell onto the victim when the arm fell. Investigators conducted repeated tests of the haul truck with the arm of the body prop assembly not properly aligned in the socket. Each time, the tests caused the haul truck dump body to fall in the same way it did in the accident.

The mine operator was present and helped Steen perform maintenance under the raised dump body while the dump body was not properly blocked against motion. The haul truck had a warning label near the body prop assembly that was unreadable due to wear. The manufacturer's manual from Caterpillar contains a copy of this label which states, "Install dump body prop before working under raised dump body to prevent it from falling, which could result in personal injury or death." During the investigation, Caterpillar told MSHA that the truck's dump body was not the original dump body manufactured with the truck. Investigators determined this is why the arm did not properly align with the socket. MSHA was unable to determine when the dump body was replaced.

A lever in the cab of the haul truck controls the motion of the haul truck's dump body and has four functions: up, down, hold, and float. "Up" raises the dump body, "down" lowers the dump body, "hold" keeps the dump body in place, and "float" releases the pressure from the hydraulic lift cylinders to allow movement of the dump body. A hydraulic system powers these controls. Investigators performed functionality tests on these dump body controls, as well as the hydraulic system, and found no issues. McDonald was unable to recall the position of the lever when he entered the cab to lift the dump body off Steen at the time of the accident. During testing of the haul truck controls, McDonald stated that the speed of the falling dump body while the lever was in the float position was about the same speed as when the accident occurred. The dump body did not fall while the lever was in the up or hold positions. Investigators concluded that the lever was in the float position when the accident occurred.

Examinations

Based on a review of the record books and interviews, K. Boyle performed the onshift examination of the accident area prior to the accident and did not observe any hazards or violations. Before October 8, 2021, pre-operational inspection records for the haul truck involved in the accident did not reveal defects that would have contributed to the accident.

Training and Experience

David Steen had approximately 17 years of mining experience, all at the Buckingham Mine complex. Steen was an underground mechanic for most of his mining career and had no experience performing maintenance on the haul truck involved in the accident. Scott Chiccarello, Mine Safety and Health Training Specialist, examined the mine's training plan and training records for all mine employees. Steen received new miner and annual refresher training in accordance with MSHA Part 48 training regulations.

The mine operator did not task train Steen on the haul truck involved in the accident. The mine operator's training plan states that miners will be task trained. Investigators did not find any task training plans for surface equipment maintenance, nor did they find any certification of training records for task training on maintenance of surface equipment.

ROOT CAUSE ANALYSIS

The accident investigation team conducted an analysis to identify the underlying causes of the accident. The team identified the following root causes, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The mine operator did not assure that the equipment was blocked against motion before the miner performed maintenance.

   Corrective Action: The mine operator developed a new written procedure for blocking against motion. The procedure requires a supervisor to confirm the blocking arm is properly placed in the socket when the dump body must be raised to perform work on or around an articulated haul truck. The mine operator trained all miners on the new procedure.

2. Root Cause: The mine operator did not train the miner to perform the task assigned to him.

   Corrective Action: The mine operator created a Job Safety Analysis (JSA), as required by the approved training plan. The mine operator trained all miners on their assigned tasks and how to use the JSA.

CONCLUSION

On October 19, 2021, at approximately 1:50 p.m., David P. Steen, a 58 year-old mechanic with 17 years of mining experience, was fatally injured when the haul truck dump body fell and pinned him against the truck frame.

The accident occurred because the mine operator did not: 1) assure that the equipment was blocked against motion before the miner performed maintenance, and 2) train the miner on how to perform the task assigned to him.

Approved By:

_____ _____

Carlos Mosley Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to CCU Coal and Construction LLC.

   A fatal accident occurred on October 19, 2021, at approximately 1:50 p.m. This order is being issued under the authority of the Federal Mine Safety and Health Act of 1977, under Section 103(k) to insure the safety of all persons at the mine, and requires the operator to obtain the approval of an authorized representative of MSHA of any plan to recover any person in the mine or to recover the mine or affected area. This order prohibits any activity in the affected area. The operator is reminded of the obligation to preserve all evidence that would aid in investigating the cause or causes of the accident in accordance with 30 CFR 50.12.

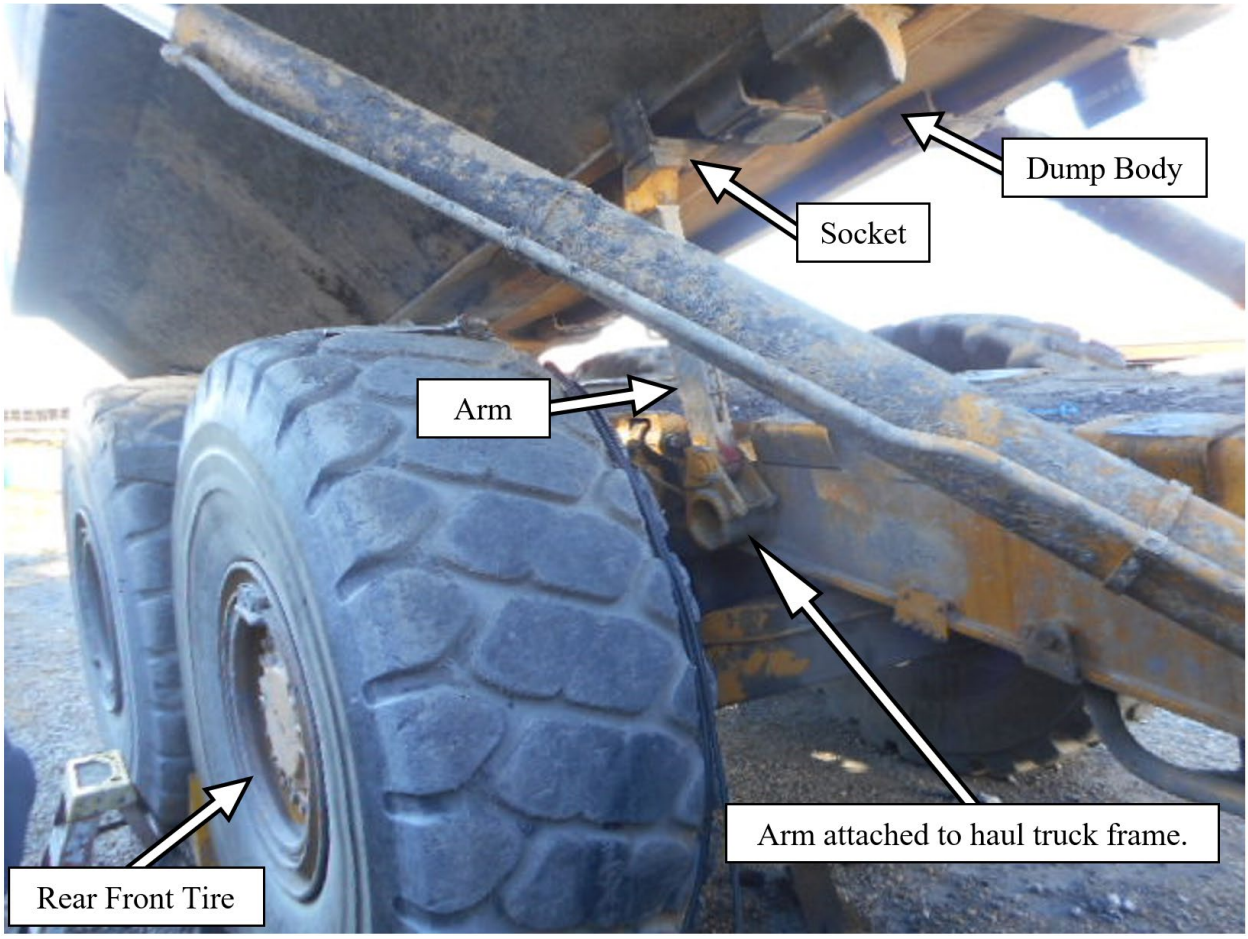
2. A 104(d)(1) citation was issued to CCU Coal and Construction LLC for a violation of 77.404(c).

   A fatal accident occurred at this mine on October 19, 2021, when a 58 year-old miner died from injuries sustained while performing repairs on the Caterpillar D400E Articulated Haul truck. While working as a mechanic, the dump body of the haul truck fell on the miner as he was attempting to remove the upper pin of the suspension cylinder. The mine operator did not assure that the equipment was blocked against motion before the miner performed maintenance on the truck. The arm of the body prop assembly was not aligned with the socket, allowing the dump body to fall when it was dislodged. This violation is an unwarrantable failure to comply with a mandatory standard.

3. A 104(d)(1) order was issued to CCU Coal and Construction LLC for a violation of 48.27(c).

   A fatal accident occurred at this mine on October 19, 2021, when a 58 year-old miner died from injuries sustained while performing repairs on the Caterpillar D400E Articulated Haul Truck. While working on the haul truck, the dump body of the haul truck fell on the miner as he was attempting to remove the upper pin of the suspension cylinder. The haul truck dump body was not properly blocked against motion. The mine operator did not train the miner to perform the task assigned to him, including proper blocking of the haul truck dump body. This violation is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Photo of the Haul Truck Involved in the Accident



APPENDIX B – Persons Participating in the Investigation

CCU Coal and Construction LLC

Alan Call	Vice President/Chief Financial Officer
William Alloway	Corporate Safety
Ariel Cohen	Attorney
Meghan Hill	Attorney
Kevin Boyle	General Manager
Matthew McDonald	Safety Director
William Costello	Trainer/Truck Driver
Daniel McDonald	Electrician/Mechanic
Ray Billingsley	Equipment Operator
Daniel Boyle	Equipment Operator

Ohio Department of Natural Resources – Division of Mineral Resources Management

Jeffrey McLean	Mine Safety Inspector

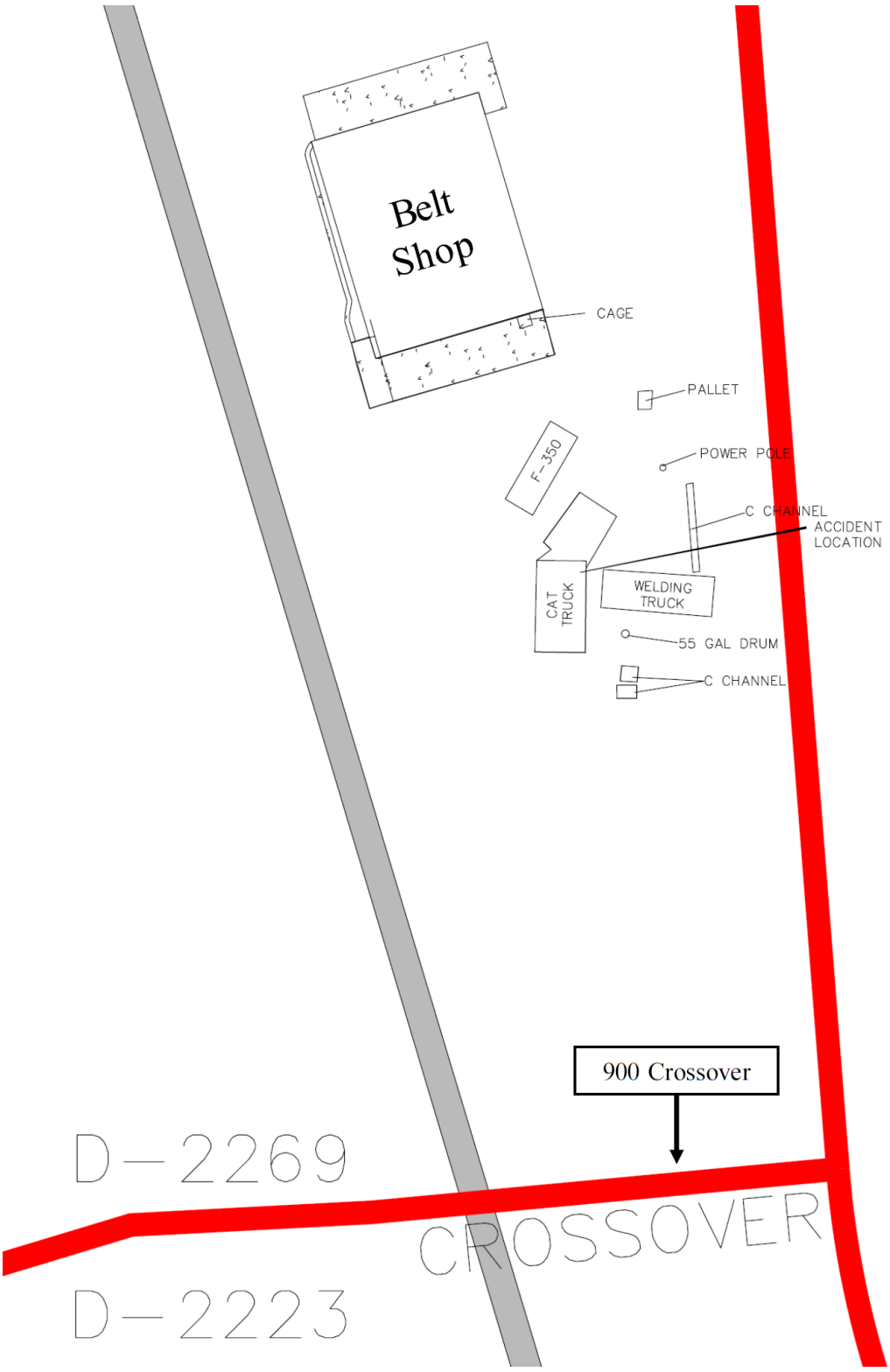
Muskingum County

Seth Vensil, M.D.	Coroner

Mine Safety and Health Administration

Michael Stark	Staff Assistant
Larry Johnson	Supervisory Mine Safety and Health Inspector
Jeremy Doshen	Mine Safety and Health Inspector
Steven Ronyak	Mine Safety and Health Inspector
Scott Chiccarello	Mine Safety and Health Training Specialist

APPENDIX C – Drawing of Accident Scene



APPENDIX D – Photo of Arm Misaligned with Socket