FAI-4012032-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Bituminous Coal)

Fatal Powered Haulage Accident
October 2, 2023

Maple Springs Mine
LCT Energy, LP
Hollsopple, Somerset County, Pennsylvania
ID No. 36-09973

Accident Investigators

David McDonald
Mine Safety and Health Inspector

Joseph Patula
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Mt. Pleasant District
631 Excel Drive, Suite 100
Mt. Pleasant, PA 15666
Michael Kelley, District Manager

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OVERVIEW

On October 2, 2023, at 11:00 a.m., Brandon Frederick, a 37 year-old roof bolter with 13 years of mining experience, was fatally injured when he was struck by a shuttle car and pinned against the coal rib.

The accident occurred because the mine operator did not have adequate procedures to protect miners in haulageways from being contacted by mobile equipment.

GENERAL INFORMATION

LCT Energy, LP owns and operates the Maple Springs Mine located in Hollsopple, Somerset County, Pennsylvania. The underground mine operates a single mechanized mining unit (MMU) in the Lower Kittanning coal seam (bituminous) with an average mining height of 50 inches. The mine employs 48 miners. The mine operates two ten-hour production shifts and one maintenance shift, four days per week. The Maple Springs Mine uses the room and pillar mining method.

The mine operator extracts coal using a continuous mining machine (CMM) and transports the coal by shuttle cars to a dumping point. From the dumping point, the mine operator uses belt conveyors to transport the coal to the surface.

The principal management officials at the Maple Springs Mine at the time of the accident were:

Joseph Kimmel	Mine Superintendent
James Dallas	Safety Manager

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on September 21, 2023. The 2022 non-fatal days lost (NFDL) injury incidence rate for the Maple Springs Mine was 7.21, compared to the national average of 3.28 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On October 2, 2023, at approximately 6:00 a.m., Frederick entered the mine and traveled to the E-1 section with the day shift crew. According to interviews, upon arriving at the section, Kenneth Christoff Jr., Section Foreman, performed his on-shift examination and measured the diagonal distances of several intersections with Ronald Weakland, Mine Foreman, Brennan Fleeger, Shuttle Car Operator, and John Buterbaugh, CMM Operator.

Christoff noted two intersections that were too wide: the first at the second crosscut outby in the No. 5 entry, and the second at the second crosscut outby in the No. 6 entry. Christoff assigned Frederick, Corey Nihoff, Scoop Operator, and Kevin Webb, Roof Bolter Helper, to set crib supports on the corners of the two intersections. Based on interviews, Christoff directed the miners to only set crib supports between mining cycles to avoid shuttle cars. Frederick; Andrew Meyers, Roof Bolter; Joshua Fisher, Shuttle Car Operator; and Nihoff built two cribs prior to the accident. One crib was built at the intersection of the third outby crosscut in the No. 5 entry near the power center (see Appendix A). Frederick, Meyers, and Nihoff then built a crib in the No. 6 entry at the second crosscut outby the working face. After building the crib in the No. 6 entry, Meyers traveled to the roof bolting machine (located in the No. 5 to 6 crosscut) and started loading roof bolts, plates, and resin onto the bolting machine.

Frederick, Nihoff, and Webb unloaded the crib blocks along the coal rib adjacent to the outby corner of the No. 4 to 5 crosscut intersection, the second open crosscut outby the face. Once they unloaded the wooden crib blocks, Webb traveled to the roof bolting machine located in the second outby No. 5 to 6 crosscut. Nihoff drove the scoop outby and waited on the shuttle cars to leave the area so the cribs could be built. Frederick stayed near the outby corner of the No. 4 to 5 crosscut in the No. 5 entry. Frank Keith, Shuttle Car Operator, positioned his shuttle car in the second outby No. 3 to 4 crosscut at the intersection of the No. 4 entry. Fleeger finished unloading and positioned his shuttle car in the No. 5 entry, just outby the second crosscut from the working face. Based on interviews, neither Keith nor Fleeger saw Frederick still standing on the outby corner of the second outby No. 4 to 5 crosscut in the No. 5 entry.

According to interviews, once the CMM loaded Fisher's shuttle car, he started to drive the

shuttle car to the feeder. The operator's cab was on the left side facing the dumping end of the shuttle car. When Fisher approached the back check curtain in the No. 5 entry, he sounded his audible warning device. Fisher then proceeded through the back check curtain and turned right from the No. 5 entry into the second outby No. 4 to 5 crosscut. While turning to the right, Fisher struck the outby coal rib in the intersection with his shuttle car. The canopy and the coal on the shuttle car obstructed Fisher's ability to see across the dumping end of the shuttle car. When Fisher struck the coal rib, he saw a light and realized his shuttle car contacted Frederick. Fisher then backed his shuttle car up approximately three feet, exited the shuttle car, and called for Buterbaugh, who is an emergency medical technician. Webb, upon hearing Fisher, traveled from the roof bolting machine in the second outby No. 5 to 6 crosscut to notify Buterbaugh. Buterbaugh stopped the CMM and traveled with Webb to the location of the accident.

Webb and Buterbaugh arrived at the scene of the accident at the same time as Joseph Kimmel, Mine Superintendent, who was nearby the CMM. Christoff and Weakland arrived seconds later after hearing the calls for help. Buterbaugh assessed Frederick and did not detect a pulse or observe breathing. Christoff instructed Meyers to retrieve a personnel carrier to transport Frederick outside. Kimmel used the mine phone to request the surface attendant to call 911.

At 11:50 a.m., Frederick was transported to the surface where the Conemaugh Township Emergency Medical Services (EMS) took over care. Alexis Lichty, Somerset County Chief Deputy Coroner, pronounced Frederick dead at 12:41 p.m.

INVESTIGATION OF THE ACCIDENT

On October 2, 2023, at 11:10 a.m., Donald Foster, Safety Director, called the Department of Labor National Contact Center (DOLNCC) to report a serious accident. The DOLNCC notified Sarah Smith, Office Assistant, and Smith informed Jeremy Williams and Todd Anderson, Assistant District Managers. Williams notified Michael Kelley, District Manager and Kelley directed Joseph Patula, Mine Safety and Health Inspector, to assist in the accident investigation. Kelley traveled to the mine to investigate. Williams also contacted Richard Gray, Supervisory Mine Safety and Health Inspector, who assigned David McDonald, Mine Safety and Health Inspector, as the lead accident investigator.

At 1:00 p.m., Patula arrived at the mine, began work to secure the area, and issued an order under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners and preservation of evidence. At approximately 1:10 p.m., McDonald, Dennis Zeanchock, Supervisory Mine Safety and Health Inspector, and Kelley arrived at the mine. MSHA's accident investigation team, along with the Pennsylvania Bureau of Mine Safety, conducted an examination of the accident scene, interviewed miners and mine management, and reviewed conditions and work practices relevant to the accident. See Appendix B for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred in the E-1 Section, in the No. 5 entry, approximately 140 feet outby from the working face, on the outby corner of the second outby No. 4 to 5 crosscut (see Appendices B and C). The mine operator mines entries approximately 18 feet wide and four feet high. The area was dry and rock dusted.

Equipment Involved

The shuttle car involved in the accident was a Highland Machine Shuttle Car Model 10/21KLA264. Investigators tested and determined the brakes, steering, and sounding device were all functioning properly. The load of coal on the shuttle car obstructed the shuttle car operator's view of the off-operator side of the machine at the time of the accident.

Examinations

The mine operator conducted the last weekly electrical examination of the shuttle car for the week of September 24, 2023, with no hazards recorded in the exam record. The on-shift and pre-shift examinations were made on the E-1 Section as required. After measuring, Christoff found wide intersections in the No. 5 and No. 6 entries at the second outby crosscuts and recorded this on the on-shift examination.

Training and Experience

Frederick had over 13 years of mining experience and just over a year of his experience was at the Maple Springs Mine. Frederick received annual refresher training on February 11, 2023. Investigators determined Frederick received training in accordance with MSHA Part 48 training regulations.

Fisher had approximately 11 years of mining experience. Fisher had over two years of experience at the Maple Springs Mine, all as a shuttle car operator. Investigators determined Fisher received training in accordance with MSHA Part 48 training regulations.

ROOT CAUSE ANALYSIS

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

Root Cause: The accident occurred because the mine operator did not have adequate procedures to protect miners in haulageways from mobile equipment contacting them.

Corrective Action: The mine operator developed written procedures to prevent a reoccurrence. The procedures are as follows:

1. A sign will be posted outby the section load center requiring notification to the section foreman prior to anyone entering inby the loading point. Once notified, the foreman will make clear where and what haulageways are being used and which shuttle cars they are operating.

2. When work in any shuttle car haulageway is to be conducted, operation of the shuttle car in said haulageway shall cease until the work is complete. When work is completed and all are clear of the haulageway, the shuttle car operator will be notified that he can continue. Examples of work include but are not limited to: installation of supplemental support, shoveling, moving cables, etc.

3. All employees will be required to wear reflective material, specifically on the upper and lower torso, front and back.

4. All miners in the working section will have a PA/MSHA approved permissible lighted visual indicator placed on the miner's back at a position higher than the miner's shoulders.

5. All shuttle cars will be equipped with cameras and screens installed and maintained to effectively increase the visibility of the operator's blind spot while traveling the haulageways. If the cameras or screens are inoperable, the shuttle car will not be used until the repairs are made. If inoperable, the haulageways will be cleared to move the shuttle car to a safe location to repair the camera system under the direct supervision of a Pennsylvania certified mine official. When a camera system is inoperable, the shuttle car number, issue, and repairs made will be recorded in a book located on the surface.

6. An audible alarm will be sounded prior to tramming a shuttle car to alert all miners in the vicinity of the shuttle car and to signal the intent of travel, and before equipment is trammed through run through curtains.

7. All equipment will have lights illuminated in the direction of travel.

8. Shuttle cars will be equipped with red lights for when the headlights are illuminated in the opposite direction.

9. All LCT employees inby the loading point will be required to carry a radio. If a visitor is on the section, they will either have a radio or be accompanied by an LCT employee with a radio.

10. At the beginning of the shift, the foreman will review the tentative cut sequence and haulage routes with the mining crew. After each cut is completed, the location of the next cut and the haulage routes that will be used will be communicated to the crew on the section. The intersections of all haulageways will be identified with reflective material. Anyone crossing into a shuttle car haulageway will communicate with the shuttle car operator(s) before crossing the travelway. Shuttle car operators will stop tramming and wait for confirmation that the travel is clear before tramming.

The mine operator trained all miners on these written procedures.

CONCLUSION

On October 2, 2023, at 11:00 a.m., Brandon Frederick, a 37 year-old roof bolter with 13 years of mining experience, was fatally injured when he was struck by a shuttle car and pinned against the coal rib.

The accident occurred because the mine operator did not have adequate procedures to protect miners in haulageways from being contacted by mobile equipment.

Approved By:

_____ _____

Michael Kelley Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to LCT Energy, LP.

   A fatal accident occurred on October 2nd, 2023, at approximately 11:00 a.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 safeguard under 75.1403 was issued to LCT Energy, LP.

   A fatal accident occurred on October 2, 2023, when a miner received fatal crushing injuries after being struck by a Highland shuttle car, model 10/21KLA264 (serial number 12-11-6439), in the active E-1 Section. Contributing factors were:

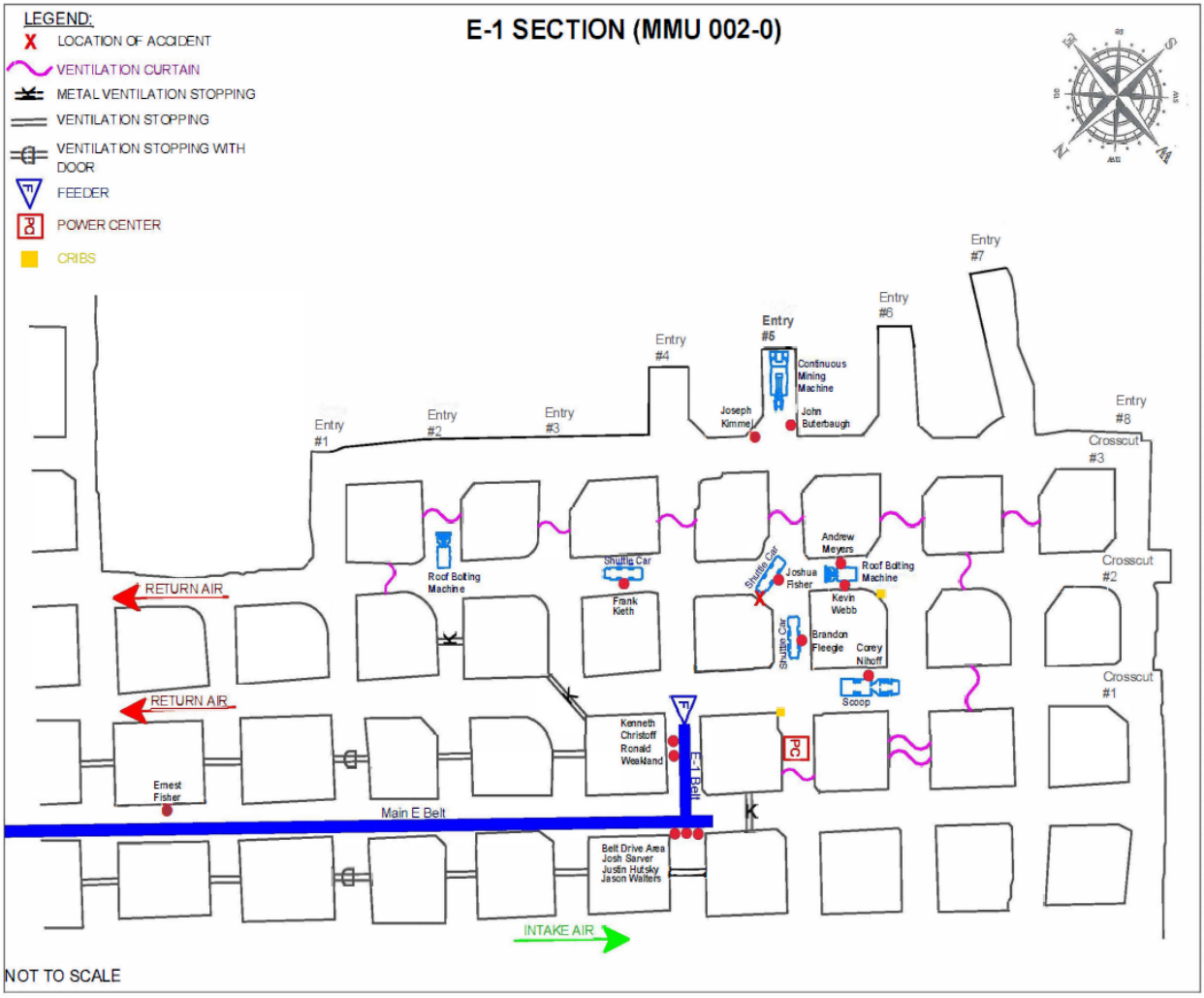
   1. The shuttle car operator's inability to see the haulageway in front of him,
   2. The shuttle car operator's inability to visually identify a miner in the haulageway, and
   3. The lack of communication between the miners and mobile face equipment operators.

   The shuttle car's canopy and the loaded coal obstructed the visibility of the shuttle car operator. In this mine, visibility is also affected by the 50-inch mining height and the elevation changes in the haulageways traveled by shuttle cars.

This is a notice to provide safeguard requiring:

1. All shuttle cars to have a camera and display system installed and properly maintained to provide visibility in both directions,
2. All miners in the working section to wear reflective material on the front and back of the upper torso, and a rearward facing illuminated light located above the miner's shoulders, and
3. All miners in the working section to carry a functional radio. Visitors will have a functional radio or will be accompanied by a miner in the working section. Prior to traveling or working in a haulageway, miners shall communicate with the equipment operators. Once notified miners are entering the haulageway, the equipment operators will cease travel until notified the area is clear.

APPENDIX A – Map of E-1 Section



APPENDIX B – Persons Participating in the Investigation

LCT Energy, LP

Mark Tercek	President
Adam Patterson	Chief Operating Officer
Troy Kunrod	General Manager
Donald Foster	Safety Director
Chris Anderson	Company Attorney
Patrick Dennison	Outside Counsel – Fisher & Phillips LLP. Law Firm
James Dallas	Safety Manager
Joseph Kimmel	Mine Superintendent
Ronald Weakland	Mine Foreman
Kenneth Christoff Jr.	Section Foreman
Joseph Sarver	Chief Mine Electrician
Justin Hutsky	Assistant Chief Electrician
John Buterbaugh	CMM Operator
Kevin Webb	Roof Bolter Helper
Joshua Fisher	Shuttle Car Operator
Brennan Fleegler	Shuttle Car Operator
Frank Keith	Shuttle Car Operator
Andrew Meyers	Roof Bolter
Corey Nihoff	Scoop Operator
Jason Walters	Mechanic
Ernest Fisher	Mine Examiner

Pennsylvania Bureau of Mine Safety

Richard Murphy	Program Manager
Mark Gindlesperger	Mine Inspector Supervisor
Albert Litzinger	Mine Inspector
Bradley Russian	Mine Inspector
Lance Noel	Electrical Inspector
William Hudak	Engineering Manager
Michael Castner	Mining Engineer
William Barclay	Engineer Consultant

Mine Safety and Health Administration

Michael Kelley	District Manager
Todd Anderson	Assistant District Manager
Dennis Zeanchock	Supervisory Mine Safety and Health Inspector
Richard Gindlesperger	Supervisory Mine Safety and Health Inspector
William Kibler Jr.	Mine Safety and Health Inspector
David McDonald	Mine Safety and Health Inspector
Joseph Patula	Mine Safety and Health Inspector

APPENDIX C – Map of the Accident Scene