

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Lead-Zinc Ore)

Fatal Powered Haulage Accident
December 6, 2022

Viburnum #35 Casteel Mine
The Doe Run Company
Bixby, Iron County, Missouri
ID No. 23-01800

Accident Investigators

Jeremy Kennedy
Mine Safety and Health Inspector

Rickey Gillam
Mine Safety and Health Inspector

Shawn Pratt
Supervisory Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Madisonville District
100 YMCA Drive
Madisonville, KY 42431
Robert Simms, District Manager

TABLE OF CONTENTS

OVERVIEW	1
GENERAL INFORMATION	1
DESCRIPTION OF THE ACCIDENT	2
INVESTIGATION OF THE ACCIDENT	2
DISCUSSION	3
Location of the Accident	3
Equipment Involved	3
Seat Belt	3
Examinations	3
Training and Experience	3
ROOT CAUSE ANALYSIS	4
CONCLUSION	4
ENFORCEMENT ACTIONS	5
APPENDIX A – Accident Location	6
APPENDIX B – Persons Participating in the Investigation	7
APPENDIX C – Getman A64 ExC 2-500SER	8



OVERVIEW

On December 6, 2022, at approximately 1:30 p.m., Hagen Barton, a 41 year-old charger tractor operator with over 16 years of experience, died when the charger tractor he was operating struck a pillar, causing him to be thrown from the charger tractor and crushed by its rear tire. Barton was returning the charger tractor to the main powder magazine area when the accident occurred.

The accident occurred because the mine operator did not: 1) ensure the charger tractor operator maintained control of the charger tractor, and 2) enforce their policy requiring miners to wear seat belts while operating mobile equipment.

GENERAL INFORMATION

The Doe Run Company, a subsidiary of Renco Group, owns and operates the Viburnum #35 Casteel Mine (Casteel). Casteel employs 102 miners and operates two ten-hour shifts, five days per week. The underground mine drills and blasts lead-zinc ore from the Viburnum Trend formation and transports the ore to the surface by belt conveyor. The surface portion of the mine crushes, mills, and separates the ore to produce lead, zinc, and copper. Casteel stores explosives underground and transports them using the charger tractor.

The principal management official at Casteel at the time of the accident was:

Robert Bosch

Mine Superintendent

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on November 28, 2022. The 2021 non-fatal days lost incident rate for Casteel was 4.81, compared to the national average of 1.27 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On December 6, 2022, at 6:30 a.m., Barton began his shift. Kelly Lincoln, Mine Supervisor, assigned Barton to blasting duties in the 58V118 North Area. Barton loaded ammonium nitrate fuel oil (ANFO) into drillholes at the active working face, drove the charger tractor to the North Powder Magazine, and parked it. At approximately 11:00 a.m., Barton drove a side-by-side utility vehicle to the elevator and exited to the surface for a meal break. At approximately 12:30 p.m., Barton returned underground on the elevator with Nathan Boyer, Mine Supervisor. At approximately 1:00 p.m., Boyer drove Barton on a side-by-side utility vehicle to the North Powder Magazine and dropped off Barton to retrieve the charger tractor. Barton began to drive the charger tractor back to the 58V118 North Area to finish loading the drillholes with ANFO. This was the last contact with Barton.

Based on interviews, at approximately 1:30 p.m., Lincoln left the main shop and drove to the North Main Haul Road when he noticed the charger tractor on the east side of the road, stopped against the 1606B pillar (see Appendix A). At 1:35 p.m., Lincoln found Barton under the charger tractor with the charger tractor running and in gear. Lincoln placed the charger tractor in neutral, shut the engine off and assessed Barton's condition. Lincoln could not find a pulse on Barton and immediately ran to a pager phone to call for help.

At approximately 2:30 p.m., Jarred Tackett, Richie Brewer, Eric Click, James Davis, and Michael Hampton, Mine Rescue Team Members, began arriving at the mine. At 3:00 p.m., the mine rescue team drove underground to assess the accident scene. The team started the charger tractor and engaged the rear passenger side outrigger to raise the charger tractor off Barton. Barton was extracted from beneath the charger tractor and transported to the surface. Timothy Harbison, Iron County Coroner, arrived at the mine and pronounced Barton dead at 5:02 p.m. There was no eyewitness to the accident.

INVESTIGATION OF THE ACCIDENT

On December 6, 2022, at 2:14 p.m., Dennis Keene, Maintenance Supervisor, called the Department of Labor National Contact Center (DOLNCC) to report a miner trapped under mobile equipment. DOLNCC called Louis Adams, Supervisory Mine Safety and Health Specialist, who called Robert Simms, District Manager. Simms called David West, Assistant District Manager, and Curtis Hardison, Staff Assistant. Hardison sent Shawn Pratt, Supervisory Mine Safety and Health Inspector; Jeremy Kennedy, Rickey Gillam, and Randal Hill, Mine Safety and Health Inspectors, to the mine to investigate the accident. Hardison assigned Kennedy to be the lead accident investigator.

At 4:10 p.m., Pratt, Kennedy, and Gillam arrived at the mine 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. On December 7, 2022, Hill arrived at the mine, to assist in the examination of the charger tractor. The accident investigation team 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 near the intersection of the 1608A pillar and the 1606B pillar on the North Main Haul Road (see Appendix A).

Equipment Involved

The charger tractor involved in the accident was manufactured in 2013 by Getman, Model No. A64 ExC 2-500SER, Serial No. 020-096, Company No. 02-03 (see Appendix C). The charger tractor had a certified rollover protective structure (ROPS), and a falling object protective structure (FOPS). Investigators examined the steering components, tires, braking system, and operator's compartment, and did not find any defects that would have contributed to the accident.

Seat Belt

Investigators inspected the seat belt and found no defects. Investigators determined that Barton was not wearing the seat belt at the time of the accident. The mine operator had a policy requiring miners to wear seat belts while operating mobile equipment.

Examinations

Barton conducted a pre-operational inspection of the charger tractor prior to beginning work. Barton also conducted a second pre-operational inspection after the meal break prior to resuming work. The pre-operational inspection record did not note any hazards. Investigators determined that the pre-operational inspections were adequate and did not contribute to the accident.

Lincoln performed the last weekly examination of ground conditions of the North Main Haul Road on December 5, 2023 and did not identify any hazards. On the day of the accident, the road was adequately graded and not wet, slippery, or covered with loose debris. Investigators observed a long gradual arc of the charger tractor path striking the 1608A pillar and found no evidence of excessive speed, swerving, or braking. The lights on the charger tractor provided sufficient illumination to see and drive safely on the road. Investigators determined that the ground condition examination was adequate, and the condition of the road did not contribute to the accident.

Training and Experience

Barton had over 16 years of mining experience, including nearly 12 years of experience as a charger tractor operator at this mine. Barton operated the charger tractor involved in the accident for nine years. Norman Zeman, Mine Safety and Health Training Specialist, reviewed Barton's training records and determined that all training was completed 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 causes, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The mine operator did not ensure that the charger tractor operator maintained control of the charger tractor.

Corrective Action: The mine operator set up a training area on the surface of the mine to train new miners on mobile equipment prior to entering the underground portion of the mine. The mine operator retrained all experienced charger tractor operators on mobile equipment and safe operating habits.

2. Root Cause: The mine operator did not enforce their policy requiring miners to wear seat belts while operating mobile equipment.

Corrective Action: The mine operator held safety meetings with all miners to retrain them on policies and requirements regarding seat belt use, equipment pre-operational inspections, and workplace examinations. Additionally, the mine operator inspected the seat belts on all mobile equipment for excessive wear and other damage.

CONCLUSION

On December 6, 2022, at approximately 1:30 p.m., Hagen Barton, a 41 year-old charger tractor operator with over 16 years of experience, died when the charger tractor he was operating struck a pillar causing him to be thrown from the charger tractor and crushed by its rear tire. Barton was returning the charger tractor to the main powder magazine area when the accident occurred.

The accident occurred because the mine operator did not: 1) ensure the charger tractor operator maintained control of the charger tractor, and 2) enforce their policy requiring miners to wear seat belts while operating mobile equipment.

Approved By:

Robert Simms
District Manager

Date

ENFORCEMENT ACTIONS

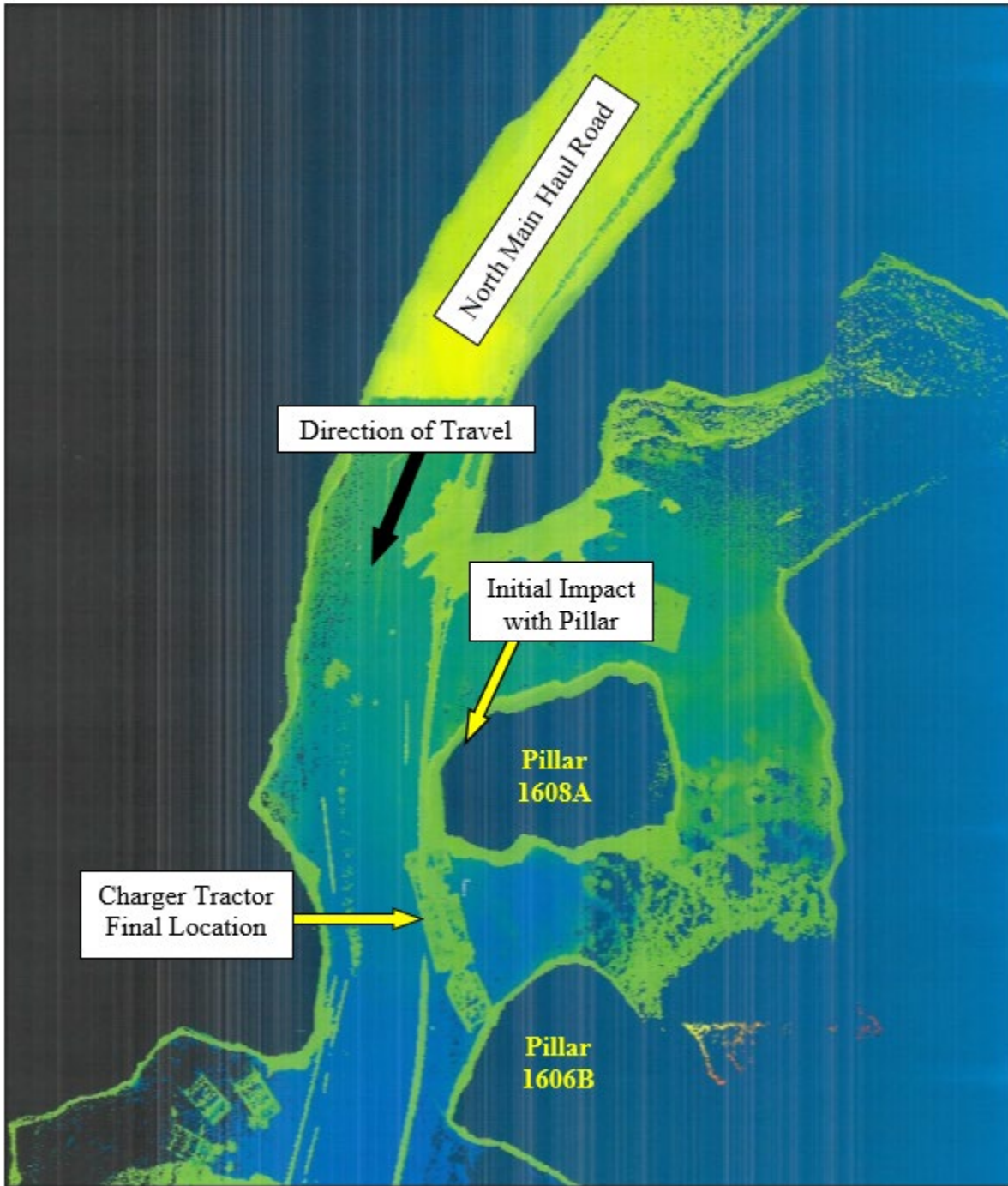
1. A 103(k) order was issued to The Doe Run Company.

An accident occurred on December 6, 2022, at approximately 1:30 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(a) citation was issued to The Doe Run Company for a violation of 30 CFR 57.9101.

A fatal accident occurred on December 6, 2022, when a charger tractor struck a pillar, causing the charger tractor operator to be thrown from the charger tractor and then crushed by the rear tire. The mine operator did not ensure that the charger tractor operator maintained control of the Getman A64 ExC 2-500SER, Company No. 02-03, Serial No. 020-096, while it was in motion.

APPENDIX A – Accident Location



APPENDIX B – Persons Participating in the Investigation

The Doe Run Company

Robert Bosch	Mine Superintendent
Nathan Boyer	Mine Supervisor
Kelly Lincoln	Mine Supervisor
Dennis Keene	Maintenance Supervisor
Richie Brewer	Mine Rescue Team Member
Eric Click	Mine Rescue Team Member
James Davis	Mine Rescue Team Member
Michael Hampton	Mine Rescue Team Member
Jarred Tackett	Mine Rescue Team Member

Mine Safety and Health Administration

Shawn Pratt	Supervisory Mine Safety and Health Inspector
Rickey Gillam	Mine Safety and Health Inspector
Randal Hill	Mine Safety and Health Inspector
Jeremy Kennedy	Mine Safety and Health Inspector
Norman Zeman	Mine Safety and Health Training Specialist

APPENDIX C – Getman A64 ExC 2-500SER

