

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Coal)

Fall of Rib Accident
June 2, 2021

Marion County Mine
Marion County Coal Resources, Inc.
Metz, Marion County, West Virginia
ID No. 46-01433

Accident Investigators

Nicholas Blevins
Mining Engineer

Jeremy Doshen
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

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OVERVIEW

On Wednesday, June 2, 2021, at approximately 2:10 a.m., Trenten J. Dille, a 25-year-old section foreman, died when a portion of the mine rib sheared off and pinned him against a continuous mining machine while he was attempting to install a rib bolt.

The accident occurred because the mine operator: 1) did not perform an adequate evaluation of the hazardous rib conditions to determine the safest corrective action; and 2) did not have effective policies or procedures to adequately support or otherwise control mine rib corners before the continuous mining machine had advanced enough to install rib bolts.

GENERAL INFORMATION

Marion County Coal Resources, Inc., a subsidiary of American Consolidated Natural Resources, Inc., owns and operates the Marion County Mine. Marion County Mine is an underground coal mine located in Metz, Marion County, West Virginia. The mine employs 462 miners and operates three shifts per day, eight hours per shift, seven days per week. The mine operator extracts coal using room and pillar and longwall mining methods and transports the coal to the surface by a belt conveyor.

The principal officers of Marion County Coal Resources Inc. at the time of the accident were:

| | |
|-----------------------|-----------------------------|
| James R. Turner | President |
| Anthony C. Vcelka, II | Treasurer |
| F. Andrew Balcar | Secretary |
| Guy Sheldy | Vice President, Engineering |

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on March 31, 2021. At the time of the accident, a regular safety and health inspection (E01) was in progress. The 2020 non-fatal days lost (NFDL) incident rate for the Marion County Mine was 7.10, compared to the national average of 3.19 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On Wednesday, June 2, 2021, Dille entered the mine around 12:00 a.m. He traveled from the Miracle Run Portal bottom to the 9-North Mains section and arrived shortly before 1:00 a.m. The miners on the working section prepared to mine while Dille performed an on-shift examination. The full-face continuous mining machine (CMM) with integral roof and rib bolters was located in the No. 6 entry.

The crew began mining and advanced the No. 6 entry approximately 20 feet. Aaron Burch, Roof Bolter, traveled outby to retrieve another bolt wrench before completing the fourth row of roof bolts. Dille arrived at the CMM and traveled to the left side roof bolting station. Jayden Graham, Utility Man, started the first rib bolt hole on the left side of the entry when he noticed a crack running vertically towards the roof. The crack was aligned with the rib bolt hole (see Appendix A).

Graham stopped drilling and motioned for Dille to come to the rib bolting station to evaluate the crack. The rib bolting station is six feet outby the roof bolting station. Graham and Dille discussed the crack. Dille decided to take over drilling the hole from Graham. When Dille had finished drilling the rib bolt hole, Dille started to install the rib bolt. Josh Snoderly, Continuous Mining Machine Operator, noticed a shift in the rib, stopped the CMM, and verbally warned Dille. Dille acknowledged Snoderly, but continued placing the rib bolt in the hole by hand. Burch told Dille that the rib looks bad. The rib bolt went into the hole approximately one foot before encountering resistance. Graham flagged Dille while he was trying to put the bolt in the hole, but Dille did not acknowledge Graham. Dille stopped and took a small step backward which placed his back against the CMM. Within seconds, the upper portion of the crosscut rib corner sheared off, and pinned Dille against the CMM (see Appendix B). The piece of rib that fell measured approximately six feet long, four and half feet wide, and two feet thick.

Burch, Graham, and Snoderly pushed the rib off Dille. Burch rendered first aid while Snoderly and Graham travelled outby to get help and gather first aid supplies. Snoderly encountered Matt Brown, Shuttle Car Operator, and notified him of the accident. Brown, who is also an emergency medical technician, went to the accident scene to help. Graham notified the

dispatcher to request an ambulance and to clear the haulage route for transporting Dille to the surface.

Brown assessed Dille and detected a faint pulse and shallow respiration. The crew placed Dille on a backboard and administered first aid. Crew members carried Dille to the end of the track and placed him in a portal bus. The portal bus transported Dille to the surface at approximately 3:00 a.m. Monongalia Emergency Medical Services (EMS) arrived as Dille reached the surface. EMS took over care and placed him into the ambulance. Shortly after, EMS could no longer detect a pulse and they performed cardiopulmonary resuscitation (CPR). EMS, in consultation with Dr. Haley Frauen, M.D., pronounced Dille's death at 3:20 a.m.

INVESTIGATION OF THE ACCIDENT

On June 2, 2021, at 2:47 a.m., Timothy Hussion, Safety Director, called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted William Spens, Supervisory Mine Safety and Health Specialist. Spens contacted Michael Stark, Staff Assistant, who notified Richard Show, Supervisory Mine Safety and Health Specialist. Show dispatched Nicholas Blevins, Mining Engineer, to the mine to investigate the accident.

Upon arrival, Blevins 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. Stark contacted Kevin Honeycutt, Supervisory Mine Safety and Health Inspector, and requested that Jeremy Doshen, Mine Safety and Health Inspector, assist with the investigation. In addition to MSHA personnel, the investigation team included the West Virginia Office of Miners' Health Safety and Training, the mine operator, and the United Mine Workers of America.

MSHA's accident investigation team conducted an examination of the accident scene, interviewed miners, and reviewed conditions and work procedures relevant to the accident. See Appendix C for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred at the inby left corner of the No. 6 entry intersection and the 51 block crosscut on the 9-North Mains section. The crack in the rib was approximately two feet from the rib corner where drilling was being conducted. The size of the rib measured approximately six feet long, four and half feet wide, and two feet thick.

Normal mining height on this section is approximately 96 inches. The mining height at the accident scene measured 112 inches and consisted of approximately 92 inches of coal and 20 inches of rock binder near the roof line. The mine operator developed the entries with additional height to decrease resistance and improve future airflow to the shaft located in the No. 5 entry (see Appendix D).

The immediate strata above the coal seam consists of a gray shale, which includes a rock binder of varying thickness. The coal ribs are prone to sloughage (material that has crumbled and fallen

away from the rib) due to the naturally occurring joints and cleats, the softness of the coal, and the depth of overburden. The direction of the 9-North Mains development results in rib sloughage predominately in the crosscuts. This sloughage typically first occurs at rib corners. The overburden at the accident scene is approximately 1,270 feet. The 112-inch mining height and the approximately 1,270 feet of overburden at the accident scene also contributed to the rib sloughage. Investigators determined that between the time that the rib corner was created and the rib bolt installation was first attempted, the factors listed above acted on the rib corner and contributed to the rib failure, as Dille was attempting to drill and bolt the rib.

Rib Bolting/Roof Control Plan

The mine operator had been rib bolting during the mining cycle to support the ribs in the entries and crosscuts. Prior to the accident, sometimes the mine operator supported the rib corners by installing rib bolts or by trimming down the corners with the CMM. The mine operator installed plastic mesh in the track, belt, and primary escapeway entries, but only outby the working places. The mine operator previously bolted the ribs in the No. 5 to No. 6 crosscut during the mining cycle.

Investigators determined that, at the location of the accident, the mine operator was complying with the approved roof control plan. MSHA approved the roof control plan on August 5, 2019. The plan requires rib bolting when mining “above seam” 18 inches or more for a distance of 25 feet or longer, and when mining “below seam” 18 inches or more for a distance of 40 feet or longer. The minimum support required is a 36-inch long bolt installed through a 36-inch long channel spaced every five feet. The mine operator installed rib supports prior to the accident in this area on four and half foot spacing.

Examinations

Jonathan Kirk, Foreman, conducted a pre-shift examination of the 9-North section on June 1, 2021, from 9:00 p.m. to 11:00 p.m. prior to the oncoming midnight shift. The mine operator did not note any hazardous conditions in the pre-shift examination record. Dille completed an on-shift examination after he arrived on the section. According to Graham, the crack in the rib was not present at the time of Dille’s examination.

Investigators concluded that Dille did not adequately evaluate all factors and determine the safest corrective action. The rib conditions changed and a crack formed while the rib bolt hole was being drilled. The rib bolt encountered resistance while Dille was trying to push it into the hole, and there were multiple warnings from miners to watch out for the rib and crack.

Training and Experience

Dille had over five years of total mining experience, with over three years of experience at this mine. He held the position of section foreman for approximately 18 months, outby foreman for approximately six months, and roof bolter for approximately 18 months. He received task training as a roof bolter on November 9, 2017, and task training for rib bolting on August 8, 2018. Dille had 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 causes, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The mine operator did not perform an adequate evaluation of the changing rib conditions to determine the safest action to correct the hazard.

Corrective Action: The mine operator modified their written training materials to include the various corrective actions available to address hazardous rib conditions. The mine operator trained all affected miners in scaling methods, bolting techniques, and machine capabilities for correcting hazardous rib conditions. In addition, evaluating the location, type of rib hazard, and correct body positioning to limit exposure was also included in the training.

2. Root Cause: The mine operator did not have effective policies or procedures to adequately support or control the mine rib corners before the continuous mining machine had advanced enough to install rib bolts.

Corrective Action: The mine operator developed new policies and procedures and revised the roof control plan to install two additional rib bolts in the upper portion of ribs to support locations that will become rib corners. In areas where the mine operator cannot install additional rib bolts, the mine operator will cut the rib corners before the miners are exposed to the corner.

CONCLUSION

On Wednesday, June 2, 2021, at approximately 2:10 a.m., Trenten J. Dille, a 25-year-old section foreman, died when a portion of the mine rib sheared off and pinned him against a continuous mining machine while he was attempting to install a rib bolt.

The accident occurred because the mine operator: 1) did not perform an adequate evaluation of the hazardous rib conditions to determine the safest corrective action; and 2) did not have effective policies or procedures to adequately support or otherwise control mine rib corners before the continuous mining machine had advanced enough to install rib bolts.

Approved by:

Carlos Mosley
District Manager

Date

ENFORCEMENT ACTIONS

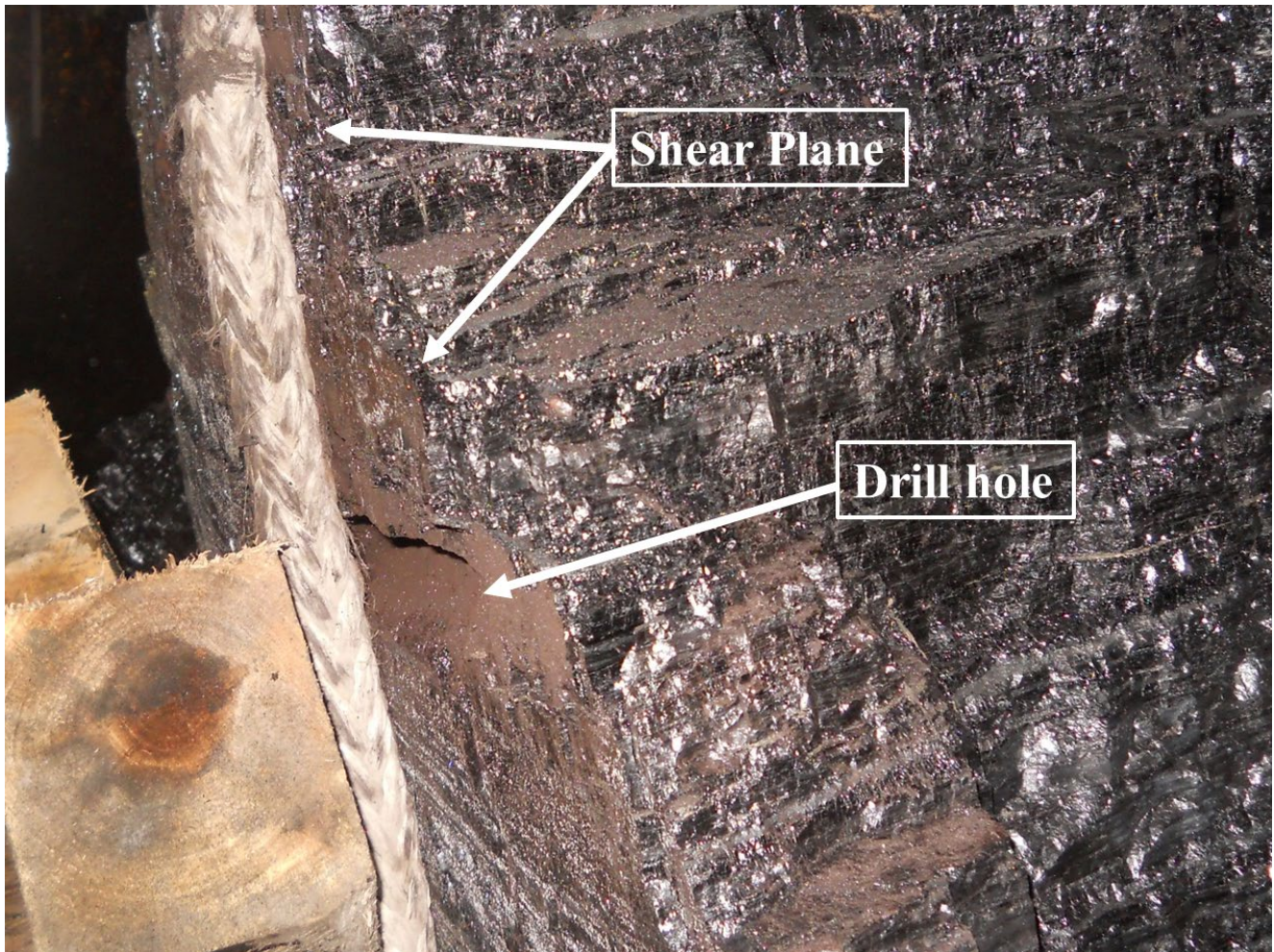
1. 103(k) Order No. 9187500 was issued June 2, 2021, at 5:20 a.m.

A fatal rib roll accident occurred at this operation at approximately 2:10 a.m. on this date. The accident occurred in the #6 entry at 51 block on the 9-North Section, MMU 065-0. This order is being issued under section 103(k) of the Mine Safety and Health Act of 1977, to protect the safety of all persons working on the 9-North Mains Section. It prohibits all activity in by the section tailpiece until MSHA can determine that it is safe to resume normal mining operations.

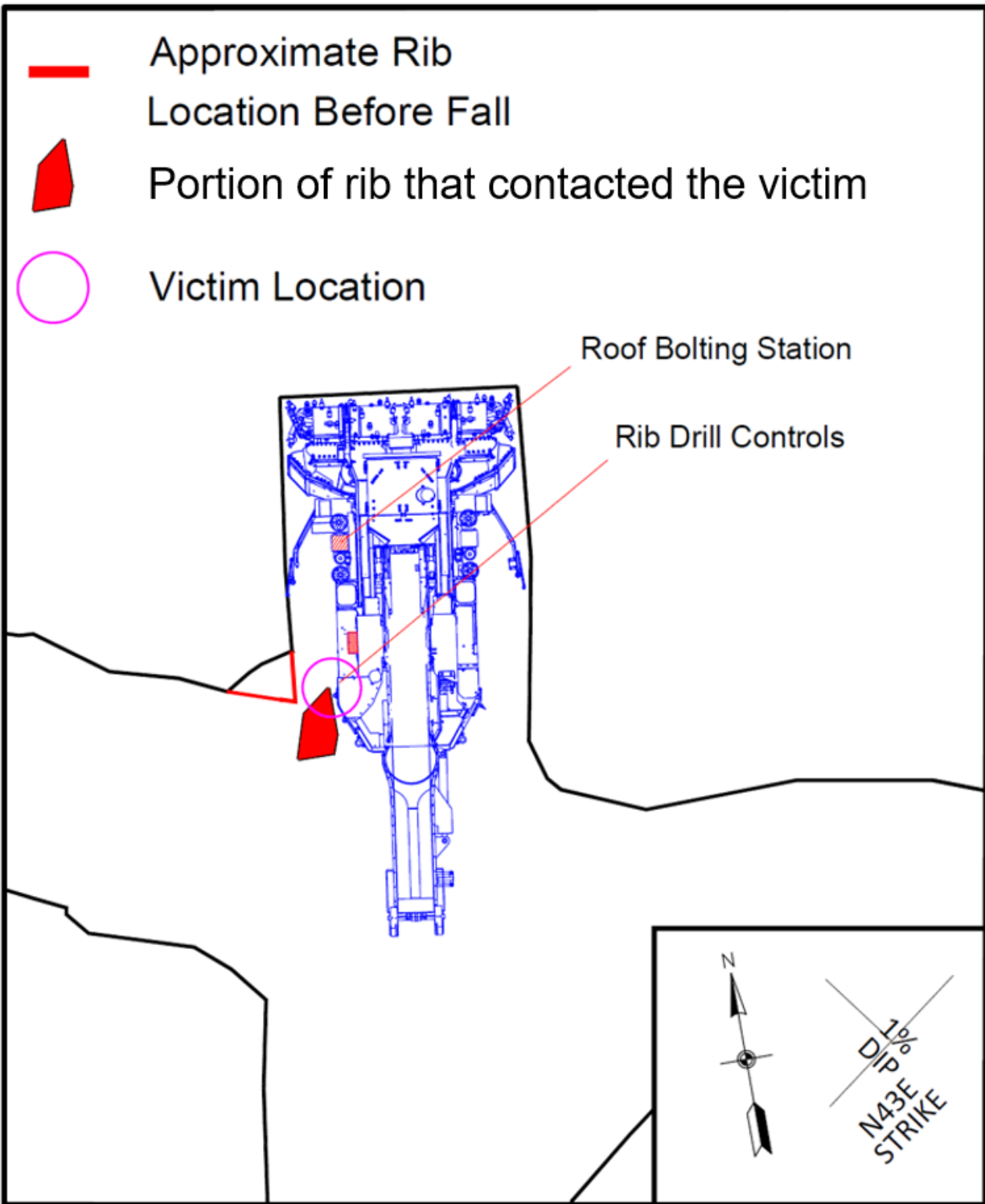
2. A 104(a) citation was issued to Marion County Coal Resources, Inc. for a violation of 30 CFR § 75.202(a).

The mine operator did not support or otherwise control the mine rib corner at the intersection of the No. 6 entry and 51 block on the 9-North Mains section. On June 2, 2021, a section foreman was fatally injured while installing a rib bolt with the continuous mining machine when the corner of the mine rib sheared off and pinned him against the mining machine. A crack was present in the rib approximately two feet from the rib corner where drilling was being conducted. The section foreman was in the process of installing the 1st rib bolt on the left side of the entry when the rib failure occurred. The size of the rib measured approximately six feet long, four and half feet wide, and two feet thick.

APPENDIX A
Photo of the Drill Hole in the Failed Rib



APPENDIX B
Drawing of the Accident Scene



APPENDIX C
Persons Participating in the Investigation

Marion County Mine

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|-----------------|------------------------------------|
| Casey Crooks | General Manager |
| Lee Terrill | Superintendent |
| Ian McLain | Mine Foreman |
| Jeff Mayne | Assistant Mine Foreman |
| Brian Hough | Corporate Safety Manager |
| Mike Savasta | Corporate Safety Manager |
| Timothy Hussion | Safety Director |
| Chris Pence | Attorney |
| Josh Moore | Shift Foreman |
| Josh Snoderly | Continuous Mining Machine Operator |
| Aaron Burch | Roof Bolter |
| Jayden Graham | Utility Man |
| Matt Brown | Shuttle Car Operator |
| Jamie Blaney | Roof Bolter |
| Mike Hinerman | Loader Operator |
| Matt Watson | Mechanic |
| Daniel Espanol | Roof Bolter |
| Fred Tennant | Outby Utility Man |
| Tim Cheney | Beltman |

United Mine Workers of America (UMWA)

| | |
|---------------|------------------------------|
| Ron Bowersox | International Representative |
| Rick Rinehart | Chairman |
| Don Rose | Chairman |
| Jason Todd | Local President |

West Virginia Office of Miners' Health Safety and Training (WVOMHST)

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|---------------|------------------------------|
| Eugene White | Director |
| John Kinder | Deputy Director |
| Ed Peddicord | Inspector at Large |
| John Meadow | Assistant Inspector at Large |
| Tony Hanlon | District Inspector |
| Ryan Triplett | District Inspector |
| Jeff Bennett | District Inspector |

Mine Safety and Health Administration (MSHA)

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|------------------|----------------------------------|
| Nicholas Blevins | Mining Engineer |
| Jeremy Doshen | Mine Safety and Health Inspector |

APPENDIX D 9-North Section Map

