

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Coal)

Machinery Accident Fatality Report
March 5, 2026

Deer Run Mine
Patton Mining LLC
Hillsboro, Montgomery County, Illinois
ID No. 11-03182

Accident Investigators

Steven Dingess
Mine Safety and Health Inspector

Stephen Tisdale
Mine Safety and Health Inspector

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OVERVIEW

On March 5, 2026, at 1:14 p.m., Jessie Smith, a 32-year-old continuous mining machine (CMM) operator with more than 6 years of mining experience died after being pinned between the CMM and the coal rib while tramming the CMM to the coal face of No. 3 entry.

The accident occurred because the mine operator did not: 1) ensure miners followed provisions in the approved Roof Control Plan to prevent them from working or traveling in the red zone of the CMM while it was being moved or repositioned; and 2) ensure the miner wearable component (MWC) of the CMM's proximity detection system (PDS) was worn in accordance with the manufacturer's recommendation.

GENERAL INFORMATION

Patton Mining LLC owns and operates Deer Run Mine. Deer Run Mine is an underground bituminous coal mine located in Hillsboro, Montgomery County, Illinois. Deer Run Mine employs 80 miners and operates three 8-hour shifts, 5 days per week. Miners extract coal from the Herrin No. 6 coal seam with three mechanized mining units (MMU). Two MMUs consist of continuous mining machines, shuttle cars, roof bolting machines, scoops, and belt feeders. One MMU consists of a longwall shearer, pan line, and a stage loader. Coal is transported by belt conveyors to an onsite processing facility.

The principal management officials at the Deer Run Mine at the time of the accident were:

Justice Carter
Tony Gilson
Daniel Skinner

General Manager
Superintendent
Safety Director

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on December 23, 2025. The 2025 non-fatal days lost incident rate for the Deer Run Mine was 6.53, compared to the national average of 3.11 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On March 5, 2026, Smith reported to work for the day shift at the Deer Run Mine. He was assigned the job duty as the substitute for one of the two CMM operators assigned to Headgate No. 9. The Headgate No. 9 crew, including Smith, entered the mine slope at 7:05 a.m. and traveled in a personnel carrier to the section. The Headgate No. 9 crew arrived at the section at 7:25 a.m. and prepared for production.

Joshua Goodman, CMM No. 29 operator, started mining the first cut out of entry No. 2. When Joshua Goodman finished, at 9:18 a.m. Smith started operating CMM No. 28 on Headgate No. 9. Smith mined one cut out of the No. 3 entry, ending at 10:04 a.m. Joshua Goodman then mined a cut out of the No. 1 entry, and after finishing the mining cut, trammed CMM No. 29 back to the No. 2 entry.

After Joshua Goodman finished mining one cut out of the No. 2 entry left crosscut, Smith walked to the No. 3 entry where CMM No. 28 was already parked to take his second mining cut for the day. Cody Rufus, shuttle car operator, trammed the shuttle car into the No. 22 crosscut between the No. 2 and No. 3 entries in the last open crosscut. For further reference, a map of the section can be found in Appendix A.

At 1:15 p.m., Rufus walked to the No. 3 entry to check on Smith, later stating in an interview that something did not seem right at the time. Rufus found Smith pinned between the conveyor tail of CMM No. 28 and the coal rib. Rufus then ran across the section to alert the other miners that Smith was pinned and to get help. Joshua Goodman heard Rufus's call for help. Brian Gall, production coordinator, heard about the accident from Colby Cagle, ventilation technician, who also heard Rufus's call. By the time Rufus returned to the accident scene, Joshua Goodman and Gall were working to get Smith unpinned. Joshua Goodman took the remote-control unit (RCU) from Smith. Gall and Rufus checked Smith's vital signs. While he was pinned, they could not detect a pulse. The CMM could not be moved while the MWCs worn by Rufus and Gall were located in the PDS shutdown zone. Because of this, Rufus and Gall took their MWCs off and tossed them, so they were out of the PDS shutdown zone. At 1:18 p.m. Joshua Goodman repositioned the conveyor tail away from Smith, unpinning him. After Smith was unpinned, Joshua Goodman, Rufus, and Gall detected a weak pulse.

At 1:18 p.m., Joshua Goodman, Rufus, and Gall worked to open Smith's airway. Smith was secured on a backboard and carried to Headgate No. 9 personnel carrier. Rufus checked again for a pulse, and no pulse was detected. Rufus and Gall performed cardiopulmonary resuscitation as Johnathan Goodman, shuttle car operator, transported Smith to the surface.

When arriving on the surface at 1:43 p.m., the ambulance was waiting and transported Smith to Hillsboro Health Hospital. The ambulance arrived at Hillsboro Health Hospital at 1:59 p.m. and Dr. Sabir Rahmanny, attending physician, pronounced Smith dead on March 5, 2026, at 2:12 p.m.

INVESTIGATION OF THE ACCIDENT

On March 5, 2026, at 1:30 p.m., Daniel Skinner, safety director, called the Department of Labor National Contact Center (DOLNCC). After contacting the DOLNCC, Skinner called Rexdon Boliard, mine safety and health inspector. Boliard contacted Dustin Galloway, staff assistant. Mary Jo Bishop, acting district manager, and Kevin Hirsch, assistant district manager, joined the call and Boliard informed them of the accident. Boliard informed them that he was enroute to the Litchfield field office, then he would be heading to the mine. Hirsch informed Daniel Bradley, supervisory mine safety and health inspector, of the accident. Bradley contacted Steven Dingess, mine safety and health inspector, and assigned him as the lead accident investigator.

On March 5, 2026, at 2:40 p.m., Boliard 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. MSHA's accident investigation team, along with Bill Patterson, Illinois Department of Natural Resources (IDNR) inspector at large, conducted interviews with miners and mine management, examined the accident scene, and reviewed conditions and work procedures relevant to the accident.

On March 7, 2026, Dingess, Tisdale, and Galloway conducted additional examinations at the mine with the help of MSHA Technical Support personnel Nicholas Fallova, general engineer, and Robert Bates, electrical engineer. Static tests of the PDS were performed with the placement of the machine as it was during the accident. After those tests were completed, CMM No. 28 was repositioned, and additional static and dynamic tests were performed around the entire machine. Jarrod Farris, Matrix Design Group field service technician, downloaded the Matrix data from CMM No. 28.

On March 11, 2026, Tisdale, along with Chris Norris, maintenance chief, and Zach Denney, maintenance foreman, were able to retrieve the Joy/Komatsu data stored on CMM No. 28. MSHA Technical Support was able to overlap both the Matrix data and Joy/Komatsu data to show Smith's MWC was not being worn in accordance with the manufacturer's recommendation. For further reference, a list of people who participated in the investigation can be found in Appendix B.

DISCUSSION

Location of the Accident

The accident occurred just inby the intersection of crosscut No. 22 in the No. 3 entry on Headgate No. 9 (Appendix A). The mine height in the entry where the accident occurred was 10 feet 3 inches. The mine floor was dry. The mine roof had metal screen wire installed and no support was installed in the coal ribs. Ventilation tubing was hung from the roof and extended from the No. 3 entry face to the auxiliary fan located in the return air course in the No. 3 entry.

Equipment Involved

The No. 28 CMM involved in the accident was a Joy Global/Komatsu, Inc., Model 12CM-27. The mine operator placed No. 28 CMM in service at the mine on September 11, 2023, after a re-build by Coal Age. The mine operator equipped the CMM with a Matrix IntelliZone PDS by Matrix Design Group. The No. 28 CMM was equipped with the Joy Network Architecture (JNA) control system.

Proximity Detection System

The purpose of the PDS is to stop the CMM before it contacts miners when it is being repositioned or trammed. The PDS activates an audio and visual warning when a CMM is a certain distance from a miner wearing an MWC. The PDS disables the tram and conveyor tail swing functions of the CMM before the CMM contacts a miner wearing an MWC. The PDS relies on signals between MWCs and machine mounted components (MMC) on the CMM. For further reference, an illustration of a complete PDS is in Appendix C.

The MMCs include four electromagnetic field generators (referred to as drivers) and one Machine Mounted Locator (MML). Two drivers are located near the front of the CMM, one on each side, and two drivers are located near the rear, one on each side. One MML was mounted on the right side of CMM No. 28. MMLs are designed to prevent tramping or swinging of the conveyor tail of a CMM if the electromagnetic signal from one of the drivers changes by a preset amount. The PDS uses the electromagnetic fields generated by the drivers and radio signals from the MWCs to determine the location of each MWC relative to the CMM. When an MWC enters the warning or shutdown zones in the electromagnetic field, the MMCs and MWC recognize the intrusion and relay the appropriate signal to the system. For further reference, a photograph of Smith's MWC is in Appendix D.

The PDS has two zones: a warning zone and a shutdown zone. When the system is working properly and a miner enters the warning zone while wearing an MWC, yellow lights flash on all four drivers, and the MWC emits a slow beeping signal with a flashing yellow light. If a miner wearing an MWC enters the shutdown zone, red lights flash on all four drivers, the MWC emits a fast-beeping signal with a flashing red light, and the PDS disables the tram and conveyor tail swing functions of the CMM.

However, if the MWC is metallically shielded, the electromagnetic fields from the drivers are not accurately measured by the MWC, and the warning and shutdown zones do not work as intended. A warning from the Matrix user manual states: “Do not position the MWC on the

continuous mining machine.”

Investigators reviewed electronic data stored on the PDS and JNA control system. PDS and JNA data revealed:

- The JNA data revealed Smith was tramming CMM No. 28 when he became pinned.
- The Matrix electronic data from Smith’s MWC, while he was tramming the No. 28 CMM, depicted behavior that was consistent with an MWC that was metallically shielded.
- At 1:14 p.m. the No. 28 CMM conveyor tail repositioned toward the right rib while tramming and the right rear of the CMM turned toward the right rib, pinning Smith.
- At 1:18 p.m., the JNA control system showed the CMM restarting and the conveyor tail moving away from Smith.

An MWC must be associated as the CMM operator before the PDS will allow the CMM to be operated. To associate the MWC as the CMM operator, a miner must double click the button on the MWC then double click again when the screen asks to confirm. After Smith was transported to the surface, Shannon Wilson, scoop operator, found Smith’s MWC in an area of the conveyor tail of No. 28 CMM that shielded the MWC, allowing the CMM to operate without triggering the shutdown zone given Smith’s location. Wilson then placed the MWC in the pouch on Smith’s belt and placed the belt on the ground in the location he found it, near the conveyor tail.

Joshua Goodman told investigators that when the fatal accident occurred, he was not wearing his MWC because it was in the area of the conveyor tail of the No. 29 CMM that shielded the MWC, like Smith’s MWC. As previously stated, the other miners had to either step out of the shutdown zone or place their MWCs to an area outside of the shutdown zone so Joshua Goodman could start the No. 28 CMM and reposition the conveyor tail.

On March 7, 2026, investigators conducted static and dynamic tests on the PDS on the No. 28 CMM. Static tests measure warning and shutdown zone distances by positioning MWCs in warning and shutdown zone locations while the CMM is not moving. This is done to measure the warning and shutdown zone distances around the CMM. Dynamic tests are performed by tramming the CMM toward an MWC that is stationary to see if the PDS will stop the CMM before contacting an MWC.

Investigators performed static testing to simulate conditions at the time of the accident, placing Smith’s MWC in a pouch on his mining belt along with other items that he had possession of at the time of the accident: a self-contained self-rescuer, an electronic tracker, and a battery for the No. 28 CMM RCU. The RCU was used with the No. 28 CMM in the same position it was in at the time of the accident. During the static testing, investigators observed that the PDS worked as it should when the MWC was used in the Matrix User Manual’s recommended location on the body or in a Matrix-approved pouch. When the MWC was placed in the No. 28 CMM conveyor tail, as was found after the accident, the drivers would turn green and allow No. 28 CMM to operate with full tram and conveyor tail functioning during repositioning.

Investigators performed additional static tests with the help of MSHA Technical Support by using Smith's MWC and taking measurements of the warning and shutdown zones around the No. 28 CMM. Investigators observed that the PDS stopped the CMM before the CMM contacted the MWC at the rear half of the CMM where the victim was located, including around the conveyor tail.

Dynamic testing was performed with Smith's MWC at the location of the accident, and at other locations around the CMM. When Smith's MWC was placed at the location of the accident, the PDS stopped the CMM before the CMM contacted the MWC each time the dynamic test was conducted. To simulate the conditions at the time of the accident during these dynamic tests, investigators placed Smith's MWC in a pouch on his miner's belt along with other items Smith had possession of at the time of the accident: a self-contained self-rescuer, an electronic tracker, and a battery for the RCU. Investigators placed the miner's belt along the right rib at the accident location. Investigators performed additional dynamic tests by placing Smith's MWC in stationary positions around the CMM. The PDS stopped the CMM from contacting the MWC in all dynamic tests.

Investigators determined that if Smith had been wearing his MWC in the Matrix User Manual's recommended location (on his body or in a Matrix-approved pouch), the PDS would have entered "shutdown" mode and would have prevented the CMM from contacting him.

Defeating the Proximity Detection System

Investigators determined through interviews that Smith, along with other CMM operators, were defeating the PDS by placing the MWC in areas of the conveyor tail that surrounded the MWC with metal. This created an electromagnetic shield that caused the PDS to assign locations to the MWC outside the shutdown zone. When the MWC was shielded in this manner, it allowed the CMM operator to be anywhere around the CMM while performing any function of the machine including tramming and repositioning the tail.

Brian Millburg, section foreman, stated during interviews that a week prior to the accident he observed Smith taking his MWC out of an area of the No. 28 CMM conveyor tail that would allow him to tram the machine while being positioned in the shutdown zone. After observing Smith doing this, Millburg verbally counseled Smith not to place his MWC on the conveyor tail. However, no other disciplinary action was taken. Additionally, Millburg observed Joshua Goodman defeating the MWC in this same way approximately 2 months prior to the accident. Joshua Goodman stated during interviews that it was common practice for CMM operators to place their MWCs in an area of the conveyor tail to operate the CMM in the shutdown zone. The mine operator had no written policy to discipline CMM operators for defeating the PDS and operating the CMM in the shutdown zone. Investigators determined that the mine operator did not ensure the MWC of the CMMs PDS was worn in accordance with the manufacturer's recommendation, which contributed to the accident.

Roof Control Plan

Deer Run Mine's roof control plan (RCP) was submitted on June 11, 2020 and approved by MSHA on June 15, 2020. Page 19, item 4 of the RCP states: "during place changing, including repositioning of the continuous mining machine within the working place, all persons involved

with the move shall be positioned in an area outby any part of the continuous mining machine while the machine is being trammed.” Red zone illustrations on page 22 of the RCP address the red zone provisions. The RCP states "Red Zones are No Zones!" For further reference, illustrations of red zones around CMMs can be found in Appendix E.

The RCP’s red zone provisions were not followed. The accident occurred when the victim was in the red zone and became pinned between the CMM and the coal rib while tramping the CMM to the working place. Investigators determined that this contributed to the accident.

Examinations

The last electrical examination of the No. 28 CMM was conducted on February 28, 2026, and the examination report states that the examiner rewrapped splices. Investigators determined, however, that because re-insulating trailing cable splices does not affect the functionality of the PDS system, this did not contribute to the accident.

Training and Experience

Smith had over six years of underground mining experience with about four years of experience as a CMM operator. Smith received his CMM training at Deer Run Mine on February 14, 2022 and his PDS training on July 30, 2020. Investigators determined Smith received all 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 ensure miners followed provisions in the approved RCP to prevent them from working or traveling in the red zone of the CMM while it was being moved or repositioned.

Corrective Actions: The mine operator retrained miners on the following provision of the approved RCP: Page 19, item 4, specifies that during place changing, including re-positioning of the continuous mining machine within the working place, all persons involved with the move shall be positioned in an area outby any part of the continuous mining machine while the machine is being trammed. Additionally, the illustration on page 22 states: “Red Zones are No Zones.”

2. Root Cause: The mine operator did not ensure the MWC of the CMM’s PDS was worn in accordance with the manufacturer's recommendation.

Corrective Action: The mine operator developed and implemented procedures for PDS examinations and red zone safety and implemented them into the RCP. The procedures require a foreman to visually examine for proper placement of the MWC on each CMM operator at the beginning of the shift and a mid-shift visual exam is performed. The foreman is required to record the examinations in the on-shift exam record for each shift.

All CMM operators shall wear a high-visibility vest, and the MWC shall be visible at approximately mid-chest height. The mine operator developed a policy regarding CMM operators' attire and MWC placement. The policy was posted with other MSHA plan postings for all mine personnel to see. The mine operator retrained all miners and foremen using Matrix trainers on how to conduct a proper static and dynamic test, and proper placement of the MWC.

CONCLUSION

On March 5, 2026, at 1:14 p.m., Jessie Smith, a 32-year-old CMM operator with more than 6 years of mining experience died after being pinned between the CMM and the coal rib while trammig the CMM to the coal face of No. 3 entry.

The accident occurred because the mine operator did not: 1) ensure miners followed provisions in the approved RCP to prevent them from working or traveling in the red zone of the CMM while it was being moved or repositioned; and 2) ensure the MWC of the CMMs PDS was worn in accordance with the manufacturer's recommendation.

Approved By:

Mary Jo Bishop
Acting District Manager

Date

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Patton Mining LLC.

A fatal accident occurred on March 5, 2026, at approximately 1:20 p.m. at this mine in the Headgate 9 MMU 001 when a miner operator was pinned against the rib in the No. 3 entry by the No. 28 continuous mining machine. 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.

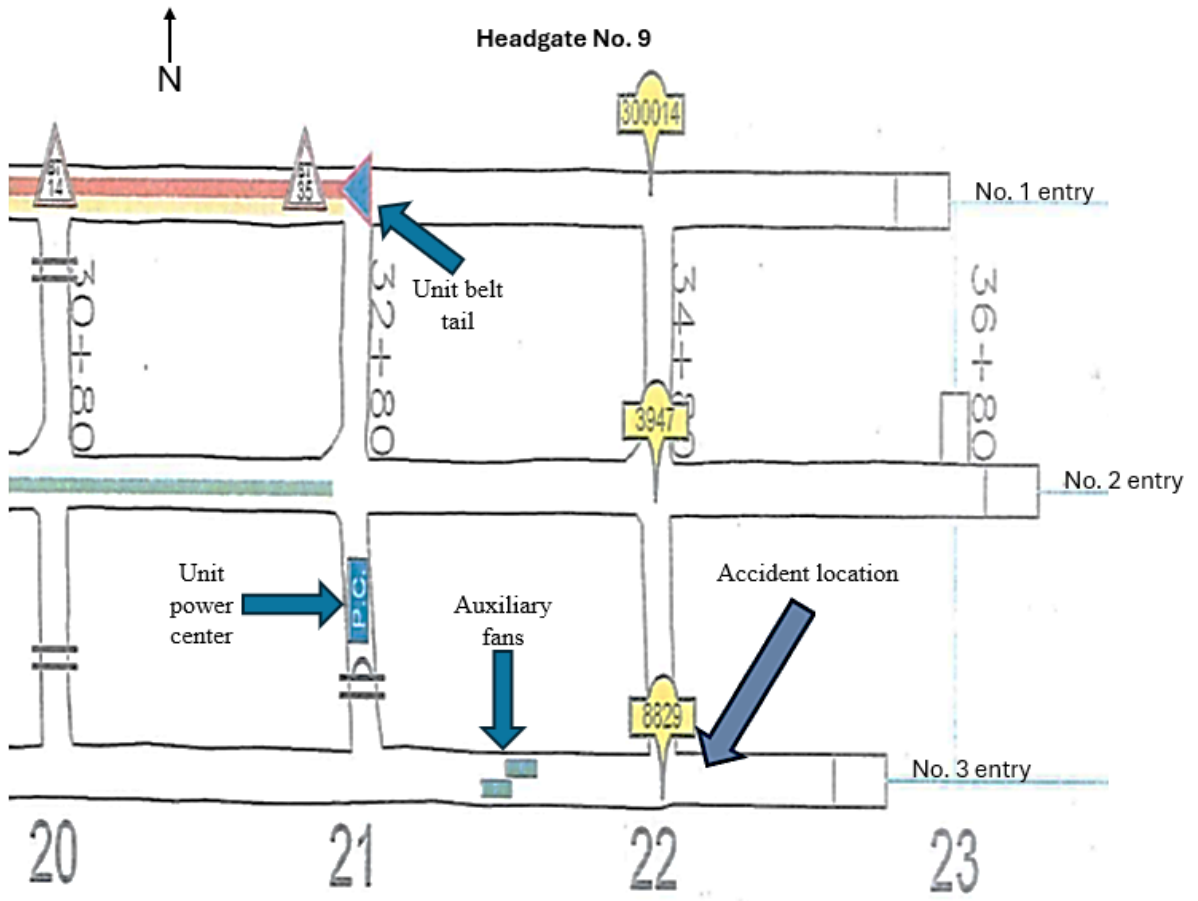
2. A 104(d)(2) order was issued to Patton Mining LLC for a violation of 30 CFR 75.220(a)(1).

The mine operator did not follow the conditions of the roof control plan (RCP) approved by the District Manager on Headgate No. 9 on March 5, 2026, when a miner was fatally injured in the red zone while tramming continuous mining machine (CMM) No. 28 to the coal face of entry No. 3 inby the last open crosscut. The miner was positioned beside CMM while it was being trammed. On page 22 of the approved RCP the illustration states: "Red Zones Are No Zones." The approved RCP on page 19, item No. 4 states: "during place changing, including re-positioning of the continuous mining machine within the working place, all persons involved with the move shall be positioned in an area outby any part of the continuous mining machine while the machine is being trammed. If an operator's compartment is provided and a cab or canopy is required due to the mining height, then the continuous miner shall be trammed from the compartment." Neither of these parts of the roof control plan was followed by the mine operator. The mine operator engaged in aggravated conduct constituting more than ordinary negligence. This violation is an unwarrantable failure to comply with a mandatory standard.

3. A 104(d)(2) order was issued to Patton Mining LLC for a violation of 30 CFR 75.1732(a).

On March 5, 2026, at 1:14 p.m., a fatal accident occurred on the Headgate No.9. A continuous mining machine (CMM) operator was pinned between CMM No. 28's right side conveyor tail near the rear of the machine and the coal rib, while tramming CMM No. 28 in the No. 3 entry inby the last open crosscut to the coal face. The mine operator knew CMM operators were placing the MWC of the PDS in an area of the conveyor tail that allowed them to operate the CMM in the shutdown zone. Multiple CMM operators had been caught operating the CMMs with the MWCs in the conveyor tail of the CMM. The mine had no written policy to discipline CMM operators for operating the CMM in the shutdown zone. The mine operator engaged in aggravated conduct constituting more than ordinary negligence. This violation is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Section Map



APPENDIX B – Persons Participating in the Investigation

Patton Mining, LLC

Justice Carter	General Manager
Tony Gilson	Superintendent
Nicholas Lands	Corporate Safety Director
Daniel Skinner	Safety Director
Brian Monk	Engineer
Brian Gall	Production Coordinator
Chris Norris	Maintenance Chief
Zach Denney	Maintenance Foreman
Brian Millburg	Section Foreman
Joshua Goodman	CMM Operator
Devin Roach	CMM Operator
Johnathan Goodman	Shuttle Car Operator
Cody Rufus	Shuttle Car Operator
Kanan Riggs	Roof Bolter
Holten Enloe	Roof Bolter
Tyler Walters	Roof Bolter
Colby Cagle	Ventilation Technician
Shannon Wilson	Scoop Operator
Mathew Page	Maintenance Electrician

Joy Global, Inc.

Bryon Helfrich	Field Service Technician
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Matrix Design Group

Jarrold Farris	Field Service Technician
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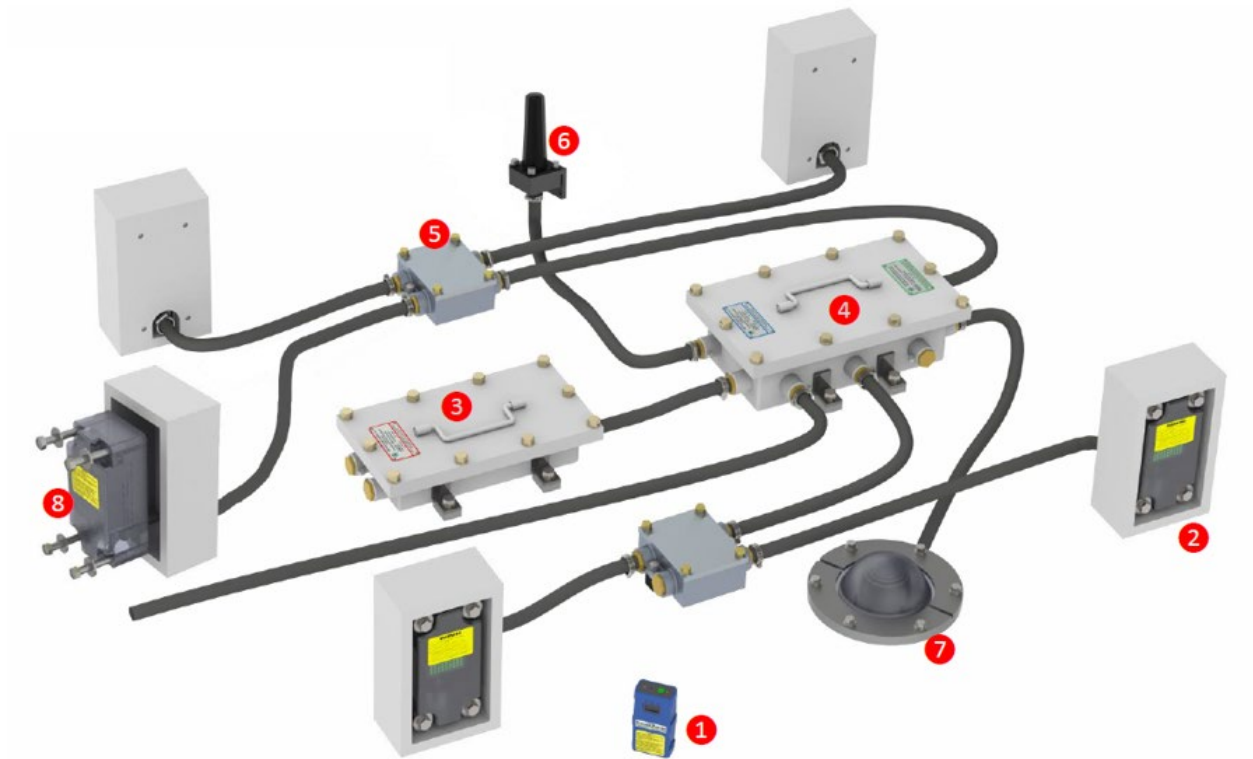
Illinois Department of Natural Resources

Bill Patterson	Inspector at Large
Ryan Kern	State Inspector
Jay Mattern	State Inspector

Mine Safety and Health Administration

Rexdon Boliard	Mine Safety and Health Inspector
Stephen Tisdale	Mine Safety and Health Inspector
Steven Dingess	Mine Safety and Health Inspector
Dustin Galloway	Staff Assistant
Nicholas Fallova	General Engineer
Robert Bates	Electrical Engineer

APPENDIX C – Diagram of a Complete PDS



1. Miner wearable component (MWC)
2. Drivers
3. Power supply
4. Controller assembly
5. Splitter Assemblies
6. Wave antenna
7. Dome antenna
8. Machine mounted locator (MML)

APPENDIX D – Photograph of Smith's Miner Wearable Component



APPENDIX E- Red Zone Image from Roof Control Plan

