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UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground
(Lead-Zinc Ore)

Fatal Fall of Roof or Back Accident
July 12, 2025

Young Mine
Nyrstar Tennessee Mines, Strawberry Plains LLC
New Market, Jefferson County, Tennessee
ID No. 40-00168

Accident Investigator

Daniel Fox
Supervisory Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Barbourville District
3837 S US Hwy 25 E
Barbourville, Kentucky 40906
Samuel Creasy, District Manager

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OVERVIEW

On July 12, 2025, at 4:15 a.m., Alan Whitaker, a 36-year-old load haul dump (LHD) loader operator with three years of mining experience, died when the roof collapsed onto the cab of the LHD loader he was operating.

The accident occurred because the mine operator did not take down or support the hazardous ground conditions before work and travel occurred in the affected area.

GENERAL INFORMATION

Nyrstar Tennessee Mines, Strawberry Plains LLC owns and operates the Young Mine. The mine is an underground lead-zinc ore mine located near New Market, Jefferson County, Tennessee. The mine employs 161 miners and operates two 12-hour production shifts and one 12-hour maintenance shift, seven days per week. The mine extracts lead-zinc ore by blasting. LHD loaders load the blasted ore into haul trucks. Haul trucks transport and dump the ore into the mill hole. Underground belt conveyors or locomotives transport the ore to an underground dump point, and a skip hoist transports it to the surface.

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

Brian Millington	Health, Safety, Environment, and Communities (HSEC) Manager
Justin Cobb	Mine Manager

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on May 6, 2025. The 2024 non-fatal days lost incident rate for the Young Mine was 1.37, compared to the national average of 1.46 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On July 11, 2025, at approximately 7:00 p.m., Whitaker started his shift and proceeded to the breakroom to attend the daily safety line out meeting. At approximately 7:15 p.m., Whitaker traveled underground via the hoist to the equipment parking/shop area to retrieve the No. 6 LHD loader but realized that the remote for the LHD was not in the cab. Whitaker could not locate the remote in the equipment parking/shop area or in the "Turkey Nest" (an elevated operating station in a supported area) in area 2025, which is the designated safe location for LHD loader operators during remote loading operations. At approximately 8:30 p.m., Joshua Waldrop, lead man, instructed Whitaker to go to area 3042 and perform some necessary clean-up activities and that he would look for the remote for the No. 6 LHD.

While Whitaker was en route to area 3042, Andrew Maynard, LHD loader operator, contacted Whitaker knowing that he needed a remote LHD loader. Maynard met Whitaker in area 2025LD (a lower development of area 2025) and they exchanged LHD loaders. Whitaker, now in the No. 8 LHD loader with remote capabilities, proceeded to area 3042 and completed the clean-up activities, then proceeded back to area 2025 to continue his assigned duties.

At 11:23 p.m., Whitaker had a flat tire and traveled to the shop with the No. 8 LHD. According to the equipment data log, Whitaker arrived at the parking/shop area at 12:03 a.m. on July 12, 2025. Whitaker remained in this area while the tire was being repaired until 1:17 a.m. Whitaker proceeded back to area 2025 to continue remotely removing material. At approximately 2:00 a.m., David Stewart, LHD loader operator, arrived in area 2025. Stewart observed Whitaker on the "Turkey Nest," remotely operating the No. 8 LHD loader in the stope. Stewart was the last to communicate with Whitaker at approximately 4:00 a.m.

At approximately 4:15 a.m., Stewart observed a dust cloud coming from the area where Whitaker was removing material. The dust affected visibility in area 2025, so Stewart proceeded to an overlook of the area where the No. 8 LHD loader was working, attempting to locate Whitaker. Once the dust began to settle, Stewart observed the No. 8 LHD loader in the stope, covered by material.

Christopher Johnson, truck driver, was in the No. 14 truck outside the stope of area 2025 being loaded at the time of the accident and noticed an enormous amount of dust coming from the right side. Johnson overheard Stewart on the radio calling out to Whitaker asking, "Are you okay?" but there was no response. Johnson went around to the stope and observed the No. 8 LHD loader covered with material.

At 4:22 a.m., Johnson used the mine phone to call Stephanie Brown, dispatcher, to ask Waldrop to come to area 2025 immediately, advising there had been an accident. At 4:26 a.m., Waldrop arrived in area 2025 and called Brown and told her to contact Justin Cobb, mine manager, and Larry Pratt, superintendent. At 4:28 a.m., Brown contacted Cobb and Brian Milligan, hoist operator, who contacted Pratt to notify them of the accident. While en route to the mine, Brian Millington, HSEC manager, began activating mine rescue personnel and called 911 at 4:50 a.m.

Recovery efforts began immediately upon the arrival of Millington and Pratt. These efforts continued until Whitaker was recovered on July 13, 2025, at 2:23 a.m. Mine rescue personnel transported Whitaker to the surface where Chris Hawley, lead medicolegal death investigator with the Knox County Regional Forensics Center, pronounced him dead at 3:41 a.m.

INVESTIGATION OF THE ACCIDENT

On July 12, 2025, at 4:55 a.m., Millington called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Grady Russell, supervisory mine safety and health inspector, who contacted Ryan O'Boyle, supervisory mine safety and health inspector. After receiving the notification via email, James Proffitt, assistant district manager, notified Lonnie Wilder, mine safety and health inspector, and sent him to the mine. Samuel Creasy, district manager, also notified via email, contacted Brandon Baker, acting assistant district manager, who then contacted Daniel Fox, supervisory mine safety and health inspector. Baker sent Fox to the mine and assigned him as lead accident investigator.

On July 12, 2025, at 9:20 a.m., Creasy, O'Boyle, and Wilder arrived at the mine. Wilder issued an order under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners and the preservation of evidence. Fox arrived at approximately 12:00 p.m. to continue the investigation.

The MSHA accident investigator conducted an examination of the accident scene, interviewed miners and mine management, and reviewed conditions and work procedures relevant to the accident. MSHA Technical Support performed a stability analysis of area 2025. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred in the stope of area 2025, under the area where the pillar just inby pillars CR and ED had been removed (Appendix B). Whitaker was in the cab of the LHD loader. The LHD loader was 68 feet beyond the cab line, which is described in depth in the Mining Methods section.

Equipment Involved

The equipment involved in the accident was a Sandvik LH517 Load Haul Dumper. The LHD loader was not manufactured with a Roll-Over Protective Structure (ROPS) or Falling Object Protective Structure (FOPS). The force of the material crushed the cab and displaced it from the frame of the LHD loader. The mine operator recovered the cab, but not the remaining portion of the LHD loader. Due to the extensive damage, the investigator was unable to perform an examination or testing to determine the condition of the cab prior to the accident.

Mining Method

The Young Mine extracts zinc ore by the irregular room-and-pillar and bulk stope mining methods. The pockets of zinc ore are typically hundreds of feet wide and occur in variable thicknesses. The mine blasts individual pockets of the ore, then accesses the blasted material by a

series of ramps driven from main haulageways. A cab line is an established safe distance from the bulk stope which provides a point of reference for the miner operating the LHD loader, as a visible barrier not to go beyond while operating the LHD loader. Miners remotely operate LHD loaders from the "Turkeys Nest." Miners operate LHD loaders remotely when the LHD loader needs to move material from unsupported areas beyond the cab line to a stockpile in a supported area. Miners manually operate the LHD loaders to load trucks which transport the material to the mill hole. Underground belt conveyors or locomotives transport the ore to an underground dump point, and a skip hoist transports it to the surface.

Ground Conditions

The mine operator had a written policy for remotely operating LHD loaders from supported areas behind the established cab line due to the known hazardous ground conditions in the bulk stope. There were no hazardous ground conditions in the "Turkey Nest" where Whitaker would have been remotely operating the LHD loader. Investigators could not determine why Whitaker was in the cab of the LHD loader with the remote when the roof fell. The mine operator did not take down or support the hazardous ground conditions before work and travel occurred in the affected area, which contributed to the accident.

Examinations

Whitaker conducted a pre-operational inspection of the No. 6 and No. 8 LHD loaders on the day of the accident and did not identify any defects. There is one note related to the breakdown involving the flat tire at 11:30 p.m. on July 11, 2025, for the No. 8 LHD. Investigators determined the pre-operational inspections were adequate and did not contribute to the accident.

Whitaker conducted a workplace examination in area 2025 prior to beginning work and did not note any hazardous conditions. Investigators determined this examination was adequate and did not contribute to the accident.

Whitaker conducted a ground condition examination where work was to be performed in area 2025 prior to beginning work and did not note any hazardous conditions. Investigators determined this examination was adequate and did not contribute to the accident.

Training and Experience

Whitaker had three years of mining experience, all at Young Mine. Whitaker received annual refresher training on July 10, 2024. The site-specific hazard awareness training and annual refresher training included identification of hazardous ground conditions. Whitaker received new task training on the Sandvik LH517 LHD on July 3, 2023. The task training included remote loading, safe zones, and cab lines. Investigators determined that Whitaker received all training in accordance with MSHA Part 48 training regulations.

ROOT CAUSE ANALYSIS

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

Root Cause: The mine operator did not take down or support the hazardous ground conditions before work and travel occurred in the affected area. The LHD loader was operated manually beyond the established cab line.

Corrective Action: The mine operator developed, implemented, and trained miners on the following written procedures:

1. All remote LHD loader operators will be retrained in line-of-sight remote loading operations.
2. All employees will be retrained on precautions and limitations in open stope areas.
3. In addition to cab line markings, signage was posted at all entries to open stopes reiterating no personnel permitted beyond this point. Additionally, cab line markings will be made with reflective paint.
4. Cameras were installed in all open stope areas during remoting operations as an additional control to monitor operations and conditions within the stope.
5. Updated the remote permit to work procedure to include monitoring the dangers beyond the cab line.

CONCLUSION

On July 12, 2025, at 4:15 a.m., Alan Whitaker, a 36-year-old LHD loader operator with three years of mining experience, died when the roof collapsed onto the cab of the LHD loader he was operating.

The accident occurred because the mine operator did not take down or support the hazardous ground conditions before work and travel occurred in the affected area.

Approved By:

_____ _____

Samuel Creasy Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Nyrstar Tennessee Mines, Strawberry Plains LLC.

   A fatal accident occurred on July 12, 2025, at 4:15 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 causes of the accident in accordance with 30 CFR 50.12.

2. A 104(a) citation was issued to Nyrstar Tennessee Mines, Strawberry Plains LLC for a violation of 30 CFR 57.3200.

   On July 12, 2025, a LHD loader operator died when the roof collapsed onto the cab of the LHD loader he was operating. The mine operator did not take down or support the hazardous ground conditions before work and travel occurred in the affected area.

APPENDIX A – Persons Participating in the Investigation

Nyrstar Tennessee Mines, Strawberry Plains LLC

Matthew Harding	General Manager
Brian Millington	HSEC Manager
Justin Cobb	Mine Manager
Larry Pratt	Superintendent
Joshua Waldrop	Lead Man
Curtis Griffin	LHD Loader Operator
Joshua Key	LHD Loader Operator
Andrew Maynard	LHD Loader Operator
David Stewart	LHD Loader Operator
Justin Watkins	LHD Loader Operator
Brian Milligan	Hoist Operator
Adam Johnson	Drill Operator
Aaron Cameron	Truck Driver
Jack Daniels	Truck Driver
Christopher Johnson	Truck Driver
Hunter Cartrette	Mechanic
Jaden Cassell	Mechanic
James Ford	Mechanic
Stephanie Brown	Dispatcher

Mine Safety and Health Administration

Samuel Creasy	District Manager
James Proffitt	Assistant District Manager
Brandon Baker	Acting Assistant District Manager
Daniel Fox	Supervisory Mine Safety and Health Inspector
Ryan O'Boyle	Supervisory Mine Safety and Health Inspector
Timothy Cornelius	Supervisory Special Investigator/Conference Litigation Representative
David Smith	Mine Safety and Health Inspector
Lonnie Wilder	Mine Safety and Health Inspector
Sandin Phillipson, Ph. D	Senior Geologist, Technical Support
Ryan Stephan, PE	Senior Mechanical Engineer, Technical Support

APPENDIX B – Post-Accident Sketch of Area 2025