

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Powered Haulage Accident  
March 29, 2005

Mine #1  
Rockhouse Energy Mining Company  
Sidney, Pike County, Kentucky  
ID No. 15-17651

Accident Investigators

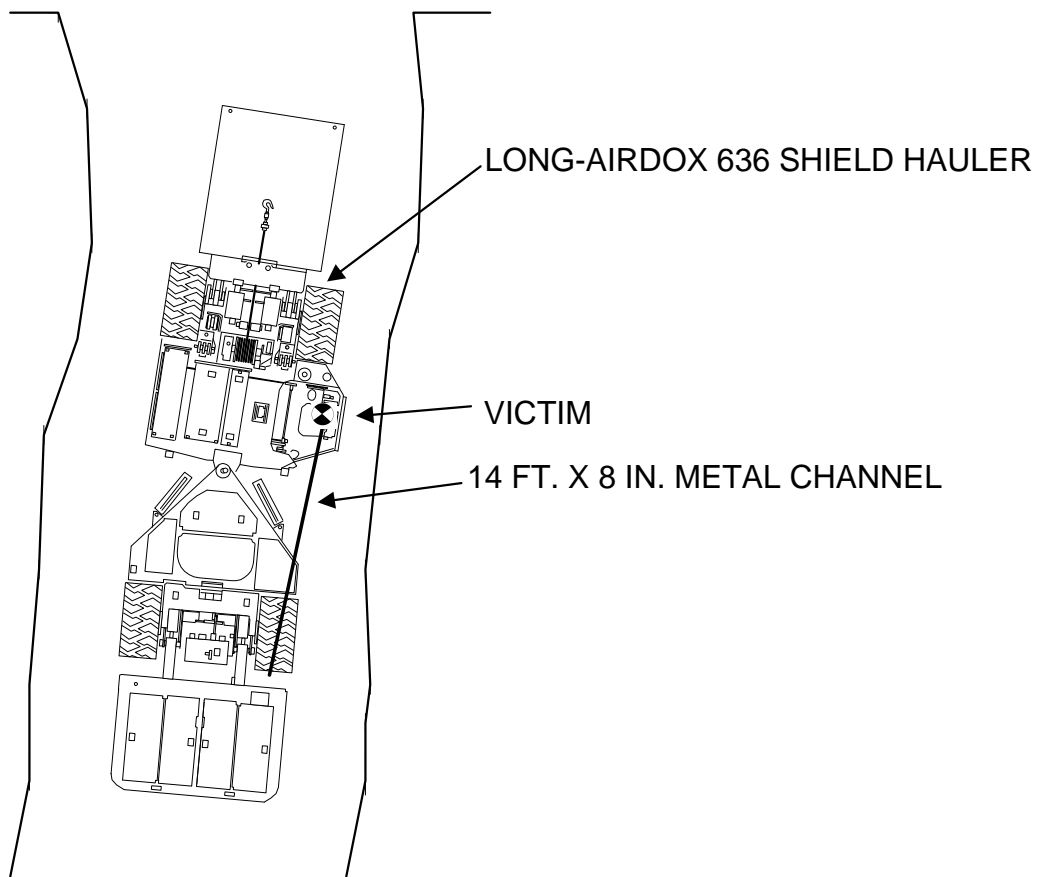
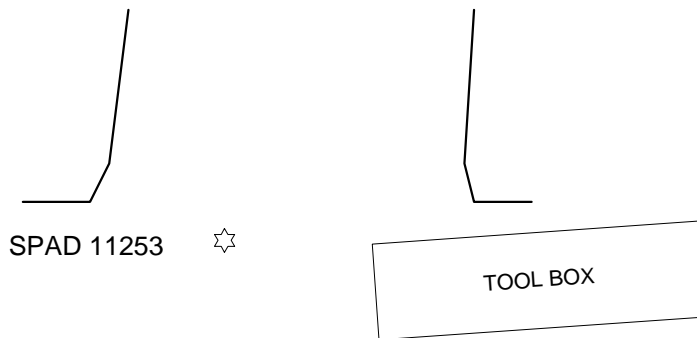
Robert J. Newberry  
Mining Engineer

Arlie A. Webb  
Supervisory Coal Mine Safety and Health Specialist

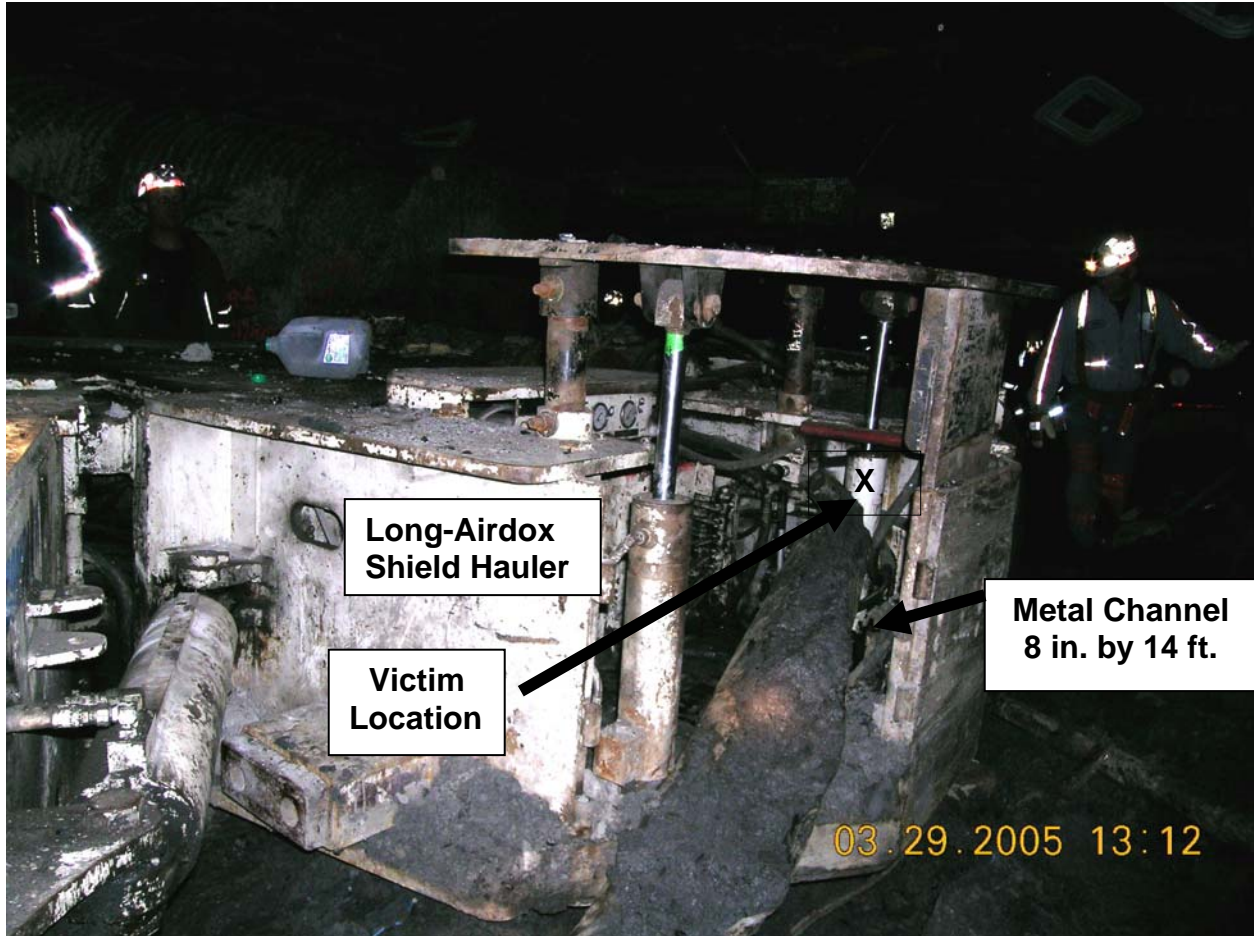
Originating Office  
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Sketch of Accident Scene  
 Fatal Fall of Roof Accident  
 Mine #1  
 Rockhouse Energy Mining Company  
 Sidney, Pike County, Kentucky  
 I.D. No. 15-17651  
 March 29, 2005



Photograph of Re-created Accident Scene  
Showing Long-Airdox Shield Hauler

## OVERVIEW

On March 29, 2005, Christopher McGuire, a 21-year old utility man/scoop operator, was fatally injured in an underground powered haulage accident on the 005-0 MMU Longwall Section. The accident occurred as McGuire was backing a Model 636 Long-Airdox battery tractor/shield hauler into a crosscut. The right rear tire of the machine ran over a 14-foot length of metal channel causing the channel to flip up and enter the operator's compartment and strike McGuire resulting in fatal crushing injuries.

The accident occurred because the mine management failed to ensure that the roadway was free of extraneous material. In addition, the Long-Airdox battery tractor was not maintained in safe operating condition because the doors for the operator's compartment had been removed. Mine examinations did not identify hazards existing in roadways and travelways.

## GENERAL INFORMATION

Rockhouse Energy Mining Company, Mine #1, is located at the intersection of Kentucky Route 468 and Rockhouse Fork Road near Sidney, Pike County, Kentucky. The principal officers for Rockhouse Energy Mining Company at the time of the accident were:

Nelson Sumpter	President
Gary Goff	Mine Superintendent
Richard Williamson	Safety Director
Tony Stacy	General Mine Foreman
Benjamin Workman	Longwall Foreman

Rockhouse Energy Mining Company, Mine #1, is opened into the Elkhorn No. 3 coal seam, which averages 44 inches in height. The mine has been in active status since May 15, 1997. Coal is produced on three active sections using two Joy remote control continuous miners with shuttle cars and one Joy longwall shear and face conveyor. Underground conveyor belts are utilized to transport the coal to the preparation plants at Longfork Coal Company at Hatfield, Kentucky and Sidney Coal Company at Sidney, Kentucky. The mine produces an average of 29,000 tons of raw coal per day.

This mine employs 126 persons. The continuous miner units operate two 9-hour shifts, five days per week and the longwall unit operates two 10-hour shifts, seven days per week. Maintenance is conducted on the off shifts.

A regular safety and health inspection by the Mine Safety and Health Administration (MSHA) was in progress at the time of the accident. The previous regular safety and health inspection of the mine was completed on December 22, 2004.

## DESCRIPTION OF ACCIDENT

On Tuesday, March 29, 2005, at approximately 6:30 a.m., the section crew under the direction of Benjamin Workman, Section Foreman, entered the mine via a track mounted diesel personnel carrier and traveled to the longwall section (005-0 mmu) for the regularly scheduled production shift. The setup crew on the previous shift had moved the power units back to accommodate the retreating longwall section. Christopher McGuire, utility man/scoop operator, began the shift installing ventilation controls.

At about 8:10 a.m., McGuire told Workman, who was at the No. 8 shield on the longwall face, that he was going to use the shield hauler to move the battery chargers. Workman told him to also get ready to move the tool cars back. When Workman left the longwall face at about 8:20 a.m., he saw the shield hauler parked in the crosscut between the No. 3 and No. 4 entries but did not see McGuire. Workman traveled down the No. 4 entry to get the oil car ready to move and as he was returning to the face, he

saw something reflective. He walked toward the shield hauler and saw McGuire in the operator's deck of the machine. Workman touched McGuire on the shoulder and asked if he was alright, but McGuire did not respond. Workman moved around to the entrance of the operator's deck where he saw the metal channel protruding into the deck.

Workman attempted to move the metal channel but was unsuccessful. He checked to see if McGuire was breathing, and he checked his pulse but found none. When he attempted to reset the breaker on the machine to tram it forward away from the metal channel, the breaker would not reset because McGuire was pinned against the panic bar. A panic bar is designed to quickly disable a machine in an emergency. Workman ran to the head gate entry and yelled to Mitch Hensley, head gate operator, to shut down the longwall and get help.

Workman went back to the shield hauler and attempted to resuscitate McGuire while awaiting help. The first to arrive was Gary May, electrician. Workman directed him to disable the panic switch. Paul Sartin, mine emergency technician, arrived and assisted in the resuscitation effort. Workman told Hensley to get oxygen and acetylene tanks at the oil car and bring them to cut the metal channel in case the breaker could not be overridden. When May could not get the pump motor on the machine to run, the channel was cut using the oxygen/acetylene torches and McGuire was extricated from the operator's compartment. He was placed on a back board, and carried to the man trip. McGuire was transported out of the mine on the diesel man trip to an ambulance that was waiting on the surface. He was then transported to the Appalachian Regional Hospital in South Williamson, Kentucky.

## **INVESTIGATION OF ACCIDENT**

Lester Morris, chief electrician for Rockhouse Mine #1, notified MSHA of the accident at 11:00 a.m. on March 29, 2005. A 103(k) order was issued to secure the accident scene while the investigation was conducted and to ensure the safety of any persons in the mine. An investigation was conducted in cooperation with State officials. Interviews were conducted with 14 miners and management officials deemed to have knowledge of the facts regarding the accident on March 30, 2005, and April 6, 2005 at the State Office of Mine Safety and Licensing office in Pikeville, Kentucky.

## **DISCUSSION**

### **MINE EXAMINATIONS**

The on-shift examination conducted during the midnight shift on March 28, 2005, for the 005-0 MMU did not note any hazardous conditions relative to the roadways. An on-shift examination conducted for the 005-0 MMU on March 28, 2005, during the afternoon shift included a remark subsequent to the record keeping requirements

indicating that “section has a lot of loose gravel, mud and water 1” to 12” deep, being scooped as much as possible.” The on-shift examination conducted during the midnight shift on March 29, 2005, for the 005-0 MMU did not note any hazardous conditions relative to roadways.

The preshift examination conducted between 9:05 p.m. and 10:35 p.m. on March 28, 2005, for the oncoming midnight shift, did not note any hazardous conditions relative to the roadways of the 005-0 MMU. The preshift examination conducted on March 29, 2005, between 4:49 a.m. and 6:08 a.m. for the oncoming day shift, did not note any hazardous condition relative to the roadways of the 005-0 MMU.

## **MINING CONDITIONS**

The accident occurred approximately 2.55 miles inby the drift opening in the crosscut between the No. 3 Entry and No. 4 Entry at Crosscut No. 88 on the 005-0 MMU Longwall Section. Measurements taken at the accident scene revealed that the overall mining height ranged from 91 inches to 109 inches, as measured from the mine floor to the mine roof. The width of the roadway at the accident scene measured approximately 17.5 feet. The approved roof control plan limits entry widths to 20 feet. The roadway was wet and muddy with 6 to 10 inches of mud and water on the mine floor. The roadway contained extraneous material including metal track ties, wooden crib blocks, metal channel, metal jacks, and concrete blocks in the vicinity of the accident.

## **MINING MACHINERY**

The machine involved in the accident was a DBT/LongAirdox Vers-A-Trac 636-2, (Serial No. 1011) battery-powered, longwall shield mover. A Fairchild operator’s compartment canopy was retrofitted on the subject 636-2 shield hauler as part of a machine rebuild done by Fairchild International in August 2002. Fairchild International certified the canopy as complying with the requirements of 75.1710. A canopy certification tag from Fairchild International was mounted on the underside of the canopy.

Observation of the Fairchild canopy shortly after the accident revealed the two canopy posts and two hydraulic cylinders and their associated mounts and attachment hardware to be as prescribed by Fairchild Drawing No. TC5155X, entitled “Canopy Assembly 35C-WH.” The canopy was not equipped with the protective cage assembly or doors as shown on the original Long-Airdox drawings (Drawing No. LUA00093,) nor the protective cage as shown on the Fairchild drawings (Drawing Nos. TC5113 and TC5133,) referenced as part of the rebuild work done in 2002. The rebuild work for the subject machine (Serial No. 1011) was conducted in June and July 2002, with the finished machine shipped back to Performance Coal in August 2002. This rebuild work included a complete new front frame with a Fairchild operator’s compartment complete with canopy, cage and doors.

Fairchild required cage and doors on their Shield Hauler. This was not an option a customer could decline. Both the Fairchild shield haulers sold to Massey and the Long-Airdox rebuild completed by Fairchild included the cage and doors. DBT America Inc. considers the cage and doors to be a requirement on their Shield Movers. The subject machine (Serial No. 1011) was originally shipped to Massey with the cage and doors installed.

## **MACHINE ELECTRICAL SYSTEM**

EQUIPMENT: DBT/Long-Airdox Model 636-2, Serial No. 1011, Approval 2G-3881-0, Battery Shield Hauler. This battery shield hauler uses the DBT/Long-Airdox control system shown on Long-Airdox drawing 490966X13-1. The referenced approval drawing on file at the Approval and Certification Center is 013609MSHA. This system uses the Long-Airdox LA2000 Logic Box, DBT # 253363-SR, Serial #0803-0015A.

During onsite operational testing, the 103(k) Order was modified to allow the machine to be moved to the #3 entry approximately five cross cuts outby the accident scene. The machine was trammed back and forth in this entry. No abnormal operation of the machine was observed. Visual observation of the controller case showed no signs of obvious failure.

The tram function would ramp up in both directions. Trying to tram without releasing the brakes resulted in the tram motor ramping up to approximately 372 amperes in both the forward and reverse directions. The brakes held the machine stationary.

Operating the disconnect switch would trip the main circuit breaker on board the machine. Tests performed on the logic box indicated that it was functioning properly.

## **MEDICAL EXAMINER'S REPORT**

An autopsy was performed at the Office of the Associate Chief Medical Examiner in Frankfort, Kentucky. The cause of death was determined to be traumatic asphyxia as a result of compression of the thorax by metal and machinery.

## **TRAINING**

On March 30, 2005, MSHA reviewed the training records. No deficiencies were discovered.

## **ROOT CAUSE ANALYSIS**

An analysis was conducted to identify the most basic causes of the accident. Causal factors were identified that, if eliminated, would have either prevented the accident or mitigated its consequences.



Listed below are causal factors identified during the analysis and their corresponding corrective actions implemented to prevent a recurrence of the accident:

Causal Factor: Hazards existing in roadways and travelways were not identified during mine examinations. The standards, policies, and administrative controls in use at the mine did not ensure that adequate examinations were conducted and corrective actions implemented.

Corrective Actions: Mine personnel received additional training regarding adequate mine examinations and all roadways were examined for hazardous conditions.

Causal Factor: Materials were present in roadways and travelways. The standards, policies, and administrative controls in use at the mine were inadequate to ensure that extraneous materials were not stored or otherwise deposited in roadways and travelways.

Corrective Actions: The operator had all active roadways examined and extraneous material removed from the roadways. Procedures were established to prevent deposition of extraneous material in roadways.

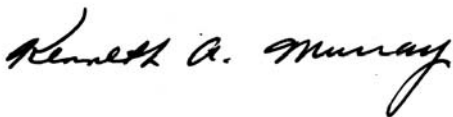
Causal Factor: The doors had been removed from the operator's compartment of the shield hauler. The standards, policies, and administrative controls in use at this mine did not ensure that the shield hauler was maintained in safe operating condition.

Corrective Actions: The operator provided the shield hauler with a cage and doors for the operator's compartment and procedures established to maintain the equipment.

## CONCLUSION

The accident occurred when the victim backed the Model 636 Long-Airdox shield hauler across a roadway that had not been cleared of extraneous material causing a 14-foot length of metal channel to enter the operator's compartment fatally injuring the operator. The accident resulted from failure to maintain roadways clear of extraneous material, inadequate examinations, and failure to maintain equipment in safe operating condition by removing the doors of the operator's compartment.

### APPROVED BY:



Kenneth A. Murray  
District Manager

Date: 07/21/2005

## ENFORCEMENT ACTIONS

- A 103(k) Order, No. 7415703, was issued to Rockhouse Energy Mining Company to ensure the safety of all persons until an investigation was completed and the area and equipment deemed safe.
- A 314(b) Safeguard, No. 7415705, was issued to Rockhouse Energy Mining Company. This is a Notice to Provide Safeguard(s) requiring that all roadways in this mine where mobile equipment is operated be maintained free of any extraneous material which causes a hazard to mobile equipment operators, passengers, or miners located in the vicinity of such equipment.
- A 104(a) Citation, No. 7415707, was issued to Rockhouse Energy Mining Company for a violation of 30 CFR 75.1725(a): The Model 636 Long-Airdox battery-powered tractor (shield hauler), Serial No. 1011, being operated on the 005-0 MMU (Longwall Section), was not maintained in safe operating condition in that the doors for the operator's compartment had been removed.
- A 104(a) Citation, No. 7407317, was issued to Rockhouse Energy Mining Company for a violation of 30 CFR 75.360(b)(1): An adequate preshift examination was not conducted for the day shift on March 29, 2005, for the roadways on the 005-0 MMU (Longwall Section.)

## APPENDIX A

### List of Persons Participating in the Investigation

#### Rockhouse Energy Mining Company Officials

Gary Goff	Mine Superintendent
Mark Heath	Attorney (Wyatt, Tarrant & Combs, LLP)
Richard Williamson	Safety Director
John Cline	Chief Engineer (Sidney Coal Company)
Steve Endicott	Safety Director (Sidney Coal Company)
Frank Foster	Safety Director (Massey Services)
Don Walker	Setup Foreman
Dwayne Francisco	Production Manager
Ray Pauley	Surveyor
Tony Stacy	Mine Foreman
Cullen Medley	Longwall Maintenance Foreman
Pete Wellman	Assistant Longwall Coordinator
Dee Hackney	Longwall Chief Electrician
Mitchell Hensley	Head Gate Operator
Benjamin Workman	Longwall Foreman
Nathan Dove	Electrician Trainee
Amos Wolford	Shear Operator
Vestil Blankenship	Shear Operator
Paul David Sartin	Jack Setter
Keith Hall	Utility
Robert Massey	Longwall Maintenance Foreman
Gary May	Chief Electrician

#### Kentucky Office of Mine Safety and Licensing

Mike Elswick	District Supervisor
Brad Fuller	Accident Investigator
Randy Bentley	Accident Investigator
Tracy Stumbo	Chief Accident Investigator
James Tackett	Safety Inspector

## Mine Safety and Health Administration

Robert M. Bates	Electrical Supervisor
William Cole	Roof Control Specialist
John Cook	Mining Engineer
Kevin Dolinar	Electrical Engineer
William Gray	Mining Engineer
Kenneth A. Murray	District Manager
Robert Newberry	Mining Engineer
Timothy R. Watkins	Assistant District Manager - Technical
Arlie A. Webb	Supervisory Mine Safety and Health Specialist