MAI-2010-22

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Metal and Nonmetal Mine Safety and Health

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Crushed and Broken Limestone)

Fatal Powered Haulage Accident
December 17, 2010

at

S W Barrick & Sons
S W Barrick & Sons
Woodsboro, Frederick County, Maryland
MSHA I.D. No. 18-00008

Investigators

Thomas J. Shilling
Mine Safety & Health Inspector

Norman C. Ridley
Mine Safety & Health Inspector

Originating Office
Mine Safety and Health Administration
Northeast District
Thorn Hill Industrial Park
547 Keystone Drive, Suite 400
Warrendale, Pennsylvania 15086-7573
Brian P. Goepfert, Acting Northeast District Manager


Victim working
in this chute

OVERVIEW

On December 17, 2010, John P. Gaither, quarry truck driver, age 35, died while working inside a discharge chute when the belt conveyor he was standing on started. Gaither was pulled out of the chute and conveyed under two crusher chutes located on the same belt conveyor. After the belt conveyor was shut down, he was found under a third crusher chute.

The accident occurred because management failed to ensure that the procedures to perform the task of plant maintenance and belt conveyor maintenance were followed. The belt conveyor was not de-energized, locked and tagged out, and blocked against motion prior to persons entering the area. Additionally, the belt conveyor was not provided with a functional alarm to warn persons of an intended start up.

GENERAL INFORMATION

S W Barrick & Sons, a surface crushed and broken limestone operation, owned and operated by S W Barrick & Sons, is located in Woodsboro, Frederick County, Maryland. The principal operating official is William F. Horner, plant manager. The mine normally operates two 10 hour shifts, 6 days a week. Total employment is 53 persons.

Material is drilled and blasted from a multi-bench quarry, loaded into haul trucks by front-end loaders, and transported to the surface plant where it is crushed, screened, and stockpiled by belt conveyors. Finished products are shipped to a variety of customers by rail and truck.

The last regular inspection of this operation was completed on September 13, 2010.

DESCRIPTION OF ACCIDENT

On the day of the accident, John P. Gaither (victim) arrived for work at 3:30 p.m., which was his normal start time. He went to the plant break room and met with coworkers before receiving the work tasks for the shift. At 4:00 p.m., Robert M. Leister, night shift foreman, arrived and told Cleave A. Leach, truck driver, Larry B. Repass, laborer, Josh Layman, laborer, and Gaither to clean all of the chutes and head boxes to prevent a buildup of frozen material over the upcoming weekend. Leister also instructed them to change the No.1 and No.3 screens.

Gaither and Leach went to the area near the No.6 and 10(A) belt conveyors. Gaither accessed the No.6 hopper box by climbing onto the No.6 belt conveyor and then into the No.6 hopper box. He then lowered himself 54 inches onto the 10(A) belt conveyor.

Repass and Layman went to the No. 34 belt conveyor discharge and feed, the No.4 discharge chute, and the No. 25 feed chute. After completing their assigned tasks, Layman and Repass met with Leister who instructed them to begin changing screen cloth on the No.1 screen.

At this time, Leach, who was also assigned to help with the screens, locked and tagged out the No.1 screen. He noticed that the 10(A) belt conveyor was not de-energized and locked out. On his way to the screen, Leach stopped and asked Gaither if he needed any help and told Gaither that the 10(A) belt conveyor was not locked out. Leach then left the area and went to work on the No.1 screen.

Leister began thawing water lines, cleaning out screw conveyors, and draining water from the plant. At 7:15 p.m., Leister finished these tasks and applied liquid heat to the No.18 belt conveyor to prevent it from freezing. He then went to the 10(A) belt conveyor area.

About 7:30 p.m., Leister observed Leach, Repass, and Layman working on the No.1 screen. Leister thought that Gaither was with them, went into the control booth, and started the 10(A) belt conveyor. After starting it, Leister left the control booth and descended the stairs. At that time, he heard Repass yelling to shut the belt conveyor off. Leister ran back up the stairs and turned the belt conveyor off. He went down the stairs again to determine what happened. Repass, Leach, and Layman yelled to Leister that Gaither was still on the 10(A) belt conveyor when it started. They then began searching for Gaither. Leach discovered Gaither on the 10(A) belt conveyor under the ISC No.1 crusher.

Leister called for Emergency Medical Services (EMS). Leach attempted to contact Gaither. Leister told Layman, Repass and Leach to begin removing the door to the crusher.

Repass, Leach, and Layman removed the door to the crusher. The responding EMS unit arrived at 7:44 p.m. EMS personnel checked Gaither and found him unresponsive. An Emergency Medical Technician (EMT) pronounced the victim dead at 7:55 p.m. The cause of death was listed as compressional asphyxia.

INVESTIGATION OF THE ACCIDENT

The Mine Safety and Health Administration, (MSHA) was notified of the accident on December 17, 2010, at 8:33 p.m. by the National Call Center. Kevin Abel, staff assistant, was then informed of the accident. An investigation was started the same day. A Part 50 citation was issued for untimely reporting. An order was issued pursuant to Section 103(j) of the Mine Act to ensure the safety of all persons. This order was later modified to Section 103(k) of the Mine Act when the first Authorized Representative arrived at the mine.

MSHA's investigators traveled to the mine, conducted a physical inspection of the accident scene, interviewed employees, and reviewed conditions and procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and employees and the Frederick County Sheriff's Office.

DISCUSSION

Location of the Accident

The accident occurred in the secondary crushing plant on the 10 (A) belt conveyor.

Weather

The weather consisted of clear skies with a temperature of 20 degrees Fahrenheit. The weather was not considered to be a factor in the accident.

10(A) belt conveyor

The 10(A) belt conveyor, model no. HT-142, was designed by Abco Engineering. The belt conveyor is 42 inches wide and 87 feet 11 inches long. It operates at approximately 420 feet per minute.

The area of the accident included four chutes that directed the flow of material as it was fed onto the 10(A) belt conveyor. Gaither was working inside the No.6 chute. The clearance between this chute and the top of the 10(A) belt conveyor was 18 inches. The next chute above the 10(A) belt conveyor is positioned under the Hazemag crusher, model no. APSE-1315/Q. This chute has approximately 14 inches of clearance between the bottom of the chute and the top of the 10(A) belt conveyor. The Impact Services Corp. impact crusher, model no. 82-VSI, was positioned over the 10(A) belt conveyor. The clearance between the chute below the crusher and the top of the 10(A) crusher is approximately 14 inches. The fourth and final chute involved in the accident was located directly under the Impact Services Corp. impact crusher, model no. 103-VSI. The clearance between this chute and the top of the 10(A) belt conveyor is approximately 18 inches.

Upon startup of the 10 (A) belt conveyor, Gaither was carried along the 10 (A) belt conveyor and under the four chutes described above. The maximum clearance between the 10 (A) belt conveyor and the bottom of the aforementioned chutes was 18 inches, with a minimum clearance of 14 inches.

MCC Room

The motor control center (mcc) is located approximately 50 feet south east of the 10(A) belt conveyor. The motor control center is on the lower floor of a two story building that also contains the plant controls on the upper floor. The motor control center consists of electrical panels with breakers that are designed to remove electrical power from individual pieces of equipment in the plant. No defects were found on the breaker for the 10(A) belt conveyor.

Control Room

The control room is located on the second floor of the same building as the motor control center. The location of the controls prevented persons from having complete visibility of the 10(A) belt conveyor. The automatic start up alarm which is interlocked to the start controls in the control booth was not functional. Damage had occurred to an electrical conductor supplying power to the alarm prior to the accident.

Root Cause Analysis

A root cause analysis was conducted and the following root causes were identified.

Root Cause: Safe operating procedures were not followed during maintenance work on the plant. The victim entered the No.6 hopper box and worked on top of the 10(A) belt conveyor without ensuring that it had been de-energized and locked out. Management failed to ensure that the victim was no longer working on the 10 (A) belt conveyor prior to starting it.

Corrective Action: All persons working in the plant were retrained regarding lock-out procedures. Management will monitor lock out procedures to ensure that they are being followed.

Root Cause: Conveyor start up procedures were not adequate to ensure that all persons were clear of moving conveyors, The automatic start up alarm was not functional.

Corrective Action: Procedures have been established to ensure the safety of all persons during belt conveyor start up**.** The nonfunctional automatic start up alarm was repaired and is now functional. Regular examinations of the alarm will be conducted to ensure that it functions as required.

Training and Experience

John P. Gaither received new miner training in accordance with 30 CFR Part 46.5, but did not receive new task training for plant and conveyor maintenance. A noncontributory citation was issued. He had 11 weeks, 4 days of mining experience, all at this mine.

Robert M. Leister had received all required training in accordance with 30 CFR Part 46. He had 8 years of mining experience, all at this mine.

Cleave A. Leach had received all required training in accordance with 30 CFR Part 46. He had 11 weeks of experience, all at this mine.

Larry B. Repass had received all required training in accordance with 30 CFR Part 46. He had 11 weeks of experience, all at this mine.

Josh Layman had received all required training in accordance with 30 CFR Part 46. He had 11 weeks of experience, all at this mine.

CONCLUSION

The accident occurred because management failed to ensure that the procedures to perform the task of plant maintenance and belt conveyor maintenance were followed. The belt conveyor was not de-energized, locked and tagged out, and blocked against motion prior to persons entering the area. The belt conveyor was not provided with a functional alarm to warn persons of an intended start up.

ENFORCEMENT ACTIONS

Issued to S W Barrick & Sons

Order No. 8578367 was issued on December 17, 2010, under the provisions of Section 103(j) of the Mine Act:

On December 17, 2010, a fatal accident occurred at the secondary crushing plant when the #10 (A) conveyor was started while a miner was on the conveyor. All persons are prohibited from entering the #10 (A) conveyor area, VSI #1 & #2 and Hazemag crusher, No.6 conveyor, No.25 conveyor, MCC room and control room. A verbal 103j order was issued by Kevin Abel, (staff assistant, northeast district) to William Francis Horner (plant manager) at 8:50 p.m.

This order was modified to Section 103(k) of the Mine Act when the first Authorized Representative arrived at the mine site.

This order was terminated on January 7, 2011, after conditions that contributed to the accident no longer existed.

Citation No. 8578370 was issued on January 13, 2011, under the provisions of Section 104(d)(1) of the Mine Act for a violation of 30 CFR 56.14201(b):

A fatal accident occurred at this operation on December 17, 2010. A miner was working on the 10(A) belt conveyor when it started without warning, fatally injuring him. The audible alarm provided for the 10(A) belt conveyor was not functional. The entire length of the belt conveyor was not visible from the starting switch and no visible or audible warning was given to warn persons that the belt conveyor would be started. Management engaged in aggravated conduct constituting more than ordinary negligence in that management knew the alarm was not functional. This is an unwarrantable failure to comply with a mandatory standard.

This citation was terminated on January 13, 2011, after the audible alarm was repaired and all persons at the mine were retrained in belt conveyor start-up procedures.

Order No. 8578371 was issued on January 13, 2011, under the provisions of Section 104(d) (1) of the Mine Act for a violation of 30 CFR 56.12016:

A fatal accident occurred at this operation on December 17, 2010. A miner was working on the 10(A) belt conveyor when it started without warning, fatally injuring him. Electrical power to the 10(A) belt conveyor was not locked out and tagged out prior to persons performing maintenance work on the belt conveyor. Management engaged in aggravated conduct constituting more than ordinary negligence in that management failed to ensure that equipment was locked and tagged out when required. This is an unwarrantable failure to comply with a mandatory standard. In the alternative, this is also a violation of mandatory standard 56.14105 which states that repairs or maintenance of

machinery or equipment shall be performed only after the power is off, and the machinery or equipment blocked against hazardous motion.

This order was terminated on January 13, 2011, after all persons at this mine were

retrained on lock-out and tag-out and de-energizing electrically powered equipment prior to working on it.

Approved: _____ Date: _____

Brian P. Goepfert
Acting District Manager

LIST OF APPENDICES

APPENDIX A

Persons Participating in the Investigation

S W Barrick & Sons

William F. Horner	Plant Manager
Robert M. Leister	Night Shift Foreman
Jerry Cline	Safety
Terry Eichelberger	Corporate Safety Director

Law Office of Mark J Hardcastle

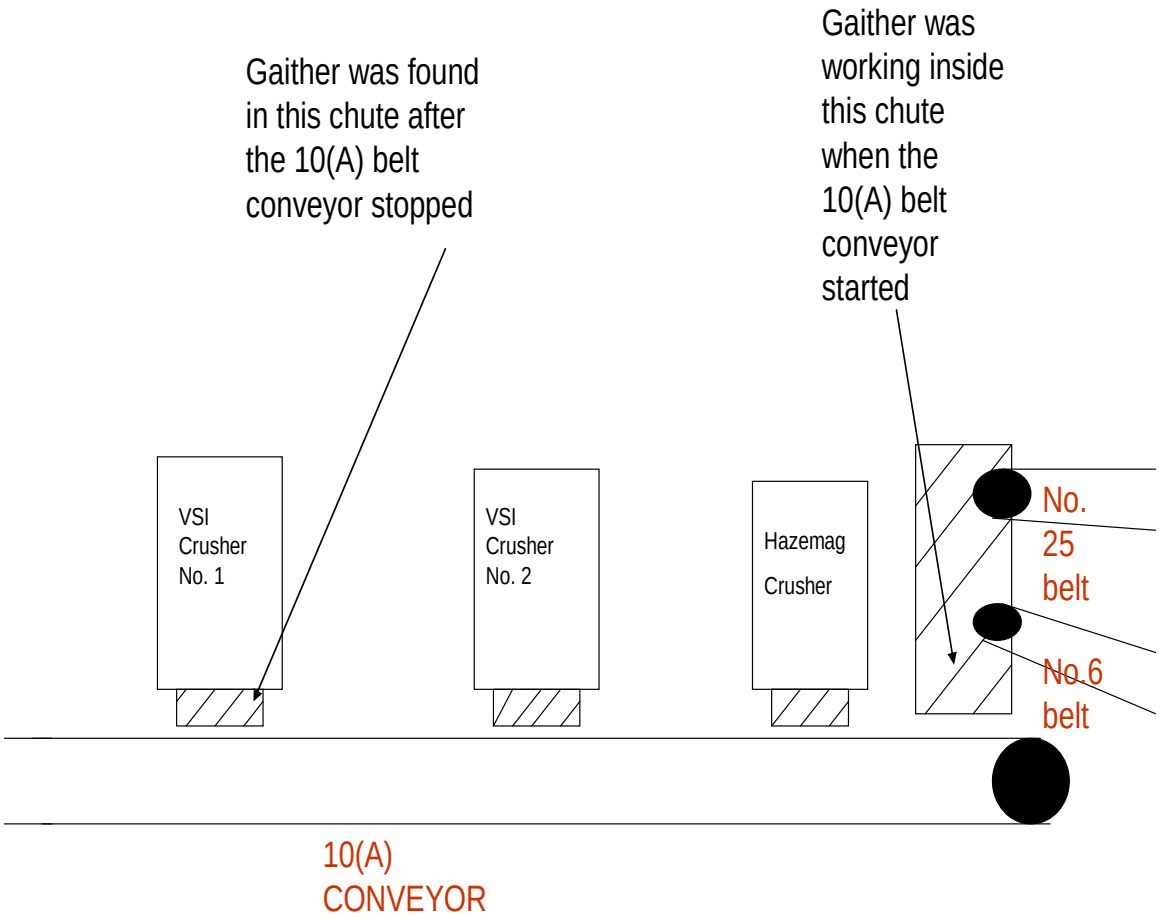
Mark J. Hardcastle	Attorney

Mine Safety and Health Administration

Thomas J. Shilling	Mine Safety and Health Inspector
Normand C. Ridley	Mine Safety and Health Inspector
Kevin T. Hardester	Mine Safety and Health Inspector

APPENDIX B

SKETCH OF ACCIDENT SCENE (NOT TO SCALE)



APPENDIX C

Accident Investigation Data - Victim Information
Event Number: 0 9 0 7 3 5 4

U.S. Department of Labor
Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Degree of Injury:
John P. Gaither	M	35	09 Fatal & NF, non-empl, on or off property

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 12/17/2010 b.Time: 19:55	a. Date: 12/17/2010 b.Time: 16:00

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
176 Truck Driver	011 Clean up work	Yes: No: X

10. Experience	a. This Work Activity:	b. Regular Job Title:	c: This Mine:	d. Total Mining:
Years	0	0	0	0
Weeks	2	11	11	11
Days	4	4	4	4

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
034 Hopper box	110 Compressional asphyxia

13. Training Deficiencies:
Hazard: | New/Newly-Employed Experienced Miner: | Annual: | Task: X

14. Company of Employment: (If different from production operator)
Operator

Independent Contractor ID: (if applicable)

15. On-site Emergency Medical Treatment:
Not Applicable: | First-Aid: | CPR: | EMT: | Medical Professional: | None: X

16. Part 50 Document Control Number: (form 7000-1)

17. Union Affiliation of Victim: 9999 None (No Union Affiliation)