MAI-2013-05

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

REPORT OF INVESTIGATION

Underground Nonmetal Mine
(Salt)

Falling Material Accident
April 16, 2013

North American Salt Company
Cote Blanche Mine
Franklin, St. Mary Parish, Louisiana
Mine ID No. 16-00358

Investigators

Michael R. Van Dorn
Supervisory Mine Safety and Health Inspector

Brandon D. Olivier
Mine Safety and Health Inspector

Michael P. Snyder, P.E.
Mining Engineer

Paul B. Shelby
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
South Central District
1100 Commerce Street Room 462
Dallas, TX 75242-0499
Fred L. Gatewood, Acting District Manager

OVERVIEW

On April 16, 2013, Michael W. Charles, Shaftman, age 58, was seriously injured when a piece of salt fell and struck him. Charles and two coworkers were replacing a bushing on the side of a skip hoist in the production shaft. Charles was working while standing on a steel beam, outside the handrails of a covered work platform where the coworkers were standing, when the material struck him. Charles was transported to a hospital where he was pronounced dead on April 17, 2013. The coworkers were also struck by the falling material and received minor injuries.

The accident occurred due to management's failure to ensure ground conditions that created a hazard to persons working in the shaft were taken down before work was permitted. Management also failed to ensure that persons performed the task of replacing the bushing from a substantial platform equipped with a bonnet or equivalent overhead protection.

GENERAL INFORMATION

Cote Blanche Mine, an underground salt operation, owned and operated by North American Salt Company, is located near Franklin, Louisiana. The principal operating official is Gordon S. Bull, Mine Manager. The mine operates two 11-hour shifts per day, seven days per week. Total employment is 155 persons.

Salt is drilled, undercut, blasted, and then delivered to an underground crusher. Crushed salt is hoisted in dual production skip hoists (skips) in a shaft referred to as the "16-foot shaft" and stockpiled on the surface. Finished products are sold for use in controlling roadway ice in the northern United States.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this mine on January 18, 2013.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, April 16, 2013, Michael Charles (victim) started work at 6:30 p.m. John Greene, Supervisor, told Charles to replace the guide rope bushings on the north skip in the "16-foot shaft". He assigned Roderick Battle, Mechanic, and Keith Hamilton, Mechanic, to assist Charles with the task. The three man crew left the clock house and gathered their tools and fall protection before going underground.

Battle and Hamilton rode with Charles on top of the north skip as it was lowered down the shaft at inspection speed. They exited the skip at the 1525-foot level elevated walkway and descended a stairway to the 1550-foot level where Greene was waiting for them in a personnel carrier. The four of them rode in the personnel carrier to the 1600-foot level.

At the 1600-foot level, Charles and Hamilton used a manlift to reach and replace the lower guide rope bushings on the north skip. Greene then drove the crew back to the 1550-foot level to replace the upper guide rope bushings on the north skip.

Charles, Battle, and Hamilton used the elevated walkway at the 1525-foot level to access the upper guide rope bushings on the south side of the north skip. Since they could not reach the bushings from the walkway, Charles climbed over the inside handrail and stood on a 6-inch wide steel beam. He was wearing fall protection and was tied off to the handrail of the walkway. Another 6-inch wide beam was less than a foot above his head.

Greene brought new U-bolts for the bushings because the crew found that the threads on the old ones had been damaged. About 11:55 p.m., as Greene was walking away from the elevated walkway, he heard a noise and turned to see that a piece of salt had fallen and struck Charles, Battle, and Hamilton. Battle and Hamilton had only minor injuries. Charles was unconscious and hanging in the shaft by his fall protection.

Greene walked up the stairs to the elevated walkway and helped Battle and Hamilton pull Charles onto the walkway. About that time, Robert Boyle, Supervisor, drove by to check on the crew's progress. Boyle radioed the surface and directed Robert Wells, Hoistman, to call for emergency medical services (EMS). Charles was placed on a stretcher and taken to the surface. EMS transported Charles to a local hospital where he was pronounced dead at 1:00 a.m. on April 17, 2013. The cause of death was attributed to blunt force trauma.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 12:14 a.m. by a telephone call from Scott Fountain, Safety Director, to MSHA's National Call Center. The National Call Center notified Elwood Burriss, Staff Assistant, and an investigation started the same day. To ensure the safety of all persons, an order was issued under provisions of section 103(j) of the Mine Act. This order was later modified to section 103(k) of the Mine Act after the arrival of an Authorized Representative at the mine site.

MSHA's accident investigation team traveled to the mine, made a physical inspection of the accident scene, interviewed employees, and reviewed documents and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management, employees, and the miners' representatives.

DISCUSSION

Location of the Accident

The accident occurred at the 1525-foot level (1,525 feet from the surface) of the "16-foot shaft." The shaft was 1,600 feet deep and had two production skips to deliver salt to the surface. The shaft served as an intake airway for the mine. The skips served as counterweights to each other i.e., when one skip was at the bottom of the shaft, the other skip was at the top of the shaft.

The first 850 feet from the top of the shaft was lined with concrete giving it a finished 16-foot inside diameter. The remainder of the shaft was unlined and had an 18-foot diameter. The shaft opened into a loading pocket at the 1525-foot level where the skips were loaded with crushed salt for delivery to the surface. Typically, guide rope bushings were changed every few months.

Elevated Walkway at 1525-Foot Level

An elevated metal walkway, constructed 25 feet above the mine floor, provided access the entire way around both the north and south production skips. The walkway was 34 inches wide and protected by a 36-inch wide semi-circular canopy. Metal stairs from the mine floor provided access to the walkway.

The victim and his coworkers were working at the west side of the north skip. He had climbed over the handrail on the east side of the walkway and was standing on a 6-inch wide steel beam at the time of the accident.

Weather

The weather on the day of the accident was clear with temperatures in the 60's. Relative humidity was high and could have caused loose material to develop on the wall of the shaft as it typically does when the humidity is high.

TRAINING AND EXPERIENCE

Michael Charles (victim) had 32 years of mining experience, all at this mine. He had worked as a shaftman for 14 years. A representative of MSHA's Educational Field Services reviewed the training records for Charles and found his training to be in compliance with MSHA requirements.

ROOT CAUSE ANALYSIS

The investigators conducted a root cause analysis and the following root causes were identified.

Root Cause: Management did not ensure ground conditions that created a hazard to persons were taken down before work was permitted in the shaft.

Corrective Actions: The shaft was inspected and scaling was performed before work was resumed.

Root Cause: The victim was not performing work from a substantial platform equipped with a bonnet or equivalent overhead protection.

Corrective Actions: Management established a policy of changing guide ropes and bushings at the surface. This policy eliminates the need for persons to perform this work in the shaft. All shaftmen were trained in this policy. If any work is required in the shaft, the work will be performed from a substantial platform equipped with a bonnet or equivalent overhead protection.

CONCLUSION

The accident occurred due to management's failure to ensure that ground conditions that created a hazard to persons working in the shaft were taken down before work was permitted. Management also failed to ensure that persons performed the task of replacing the bushing from a substantial platform equipped with a bonnet or equivalent overhead protection.

ENFORCEMENT ACTIONS

Issued to North American Salt Company

Order No. 8687448 - Issued on April 16, 2013, under the provisions of section 103(j) of the Mine Act. An Authorized Representative modified this order to section 103(k) of the Mine Act upon arrival at the mine site:

> *This action is due to a fatal accident that occurred at this operation on April 16, 2013, when a shaftman was struck by falling salt in the 16-foot shaft. This order is issued to assure the safety of all persons at this operation. It prohibits all activity in the 16-foot shaft and in the loading pocket of the shaft. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore the affected area.*

This order was terminated on April 18, 2013, when the conditions that contributed to the accident no longer existed.

Citation No. 8680854 – Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 57.3200:

A serious accident occurred at this operation on April 16, 2013. A miner was standing on a steel beam outside the handrails of a covered work platform in the "16-foot shaft"

when a piece of salt fell and struck him. The miner was transported to a hospital where he died on April 17, 2013. Ground conditions that created a hazard were not taken down before work was permitted in the shaft.

Citation No. 8680853 – Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 57.19109:

A serious accident occurred at this operation on April 16, 2013. A miner was standing on a steel beam outside the handrails of a covered work platform in the "16-foot shaft" when a piece of salt fell and struck him. The miner was transported to a hospital where he died on April 17, 2013. The miner was not performing his work from a substantial platform and he was not under a bonnet or equivalent overhead protection.

Approved: Fred L. Gatewood Date: 6-21-2013

Fred L. Gatewood
Acting District Manager

APPENDIX A

PERSONS PARTICIPATING IN THE INVESTIGATION

North American Salt Company

Jack Leunig	Vice-President
James Wolf	Vice-President
Gordon Bull	Mine Manager
Scott Fountain	Safety Supervisor
Terry Keen	EHS&S Manager

RESPEC Engineering

Peter Smith	Staff Geologist

United Steel Workers of America, Local 14425

Keith LeBlanc	Miners' Representative
Willis Owens	Miners' Representative

Patton Boggs, LLP

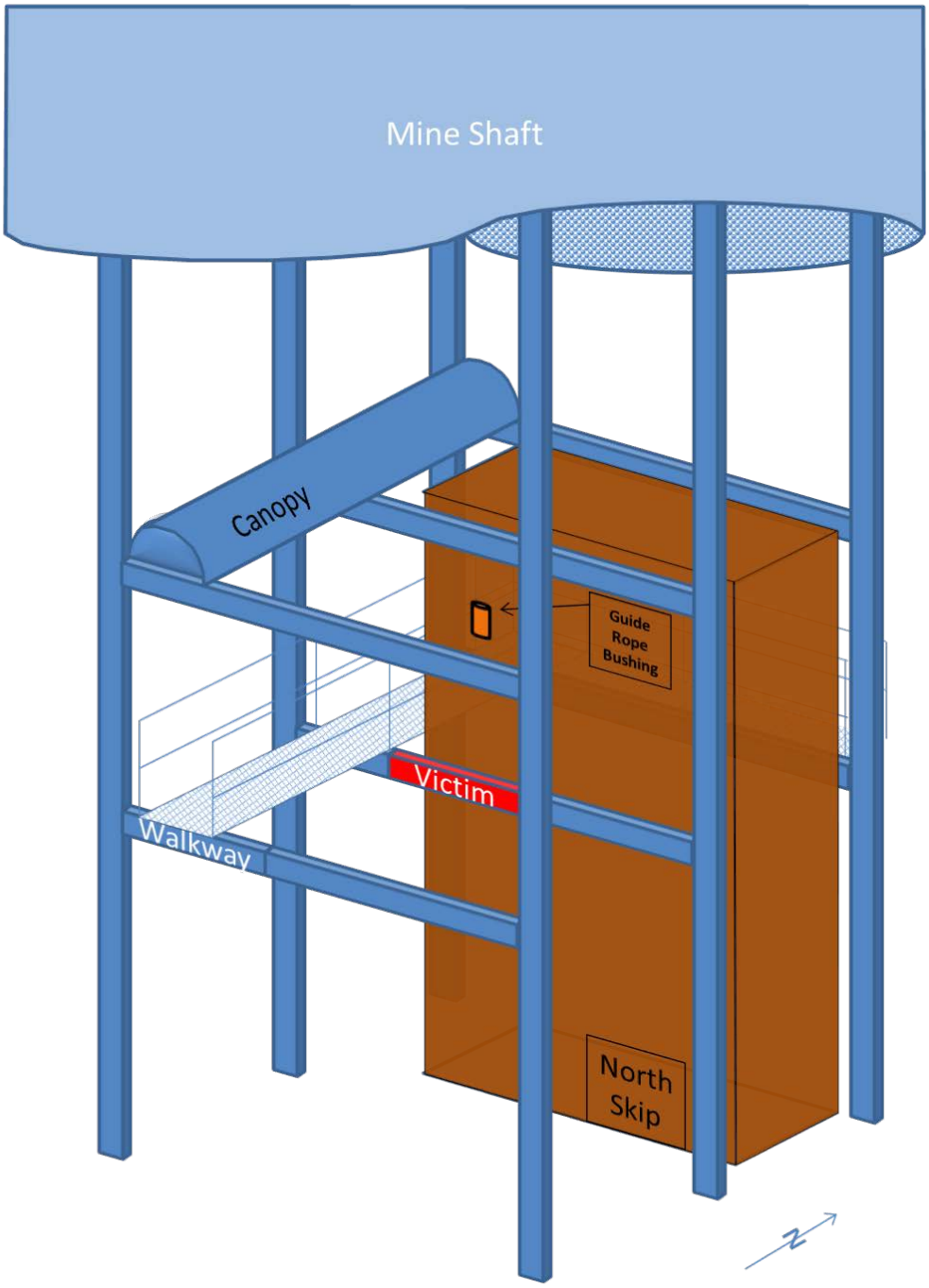
Marci Fulton	Attorney
Mark Savit	Attorney

Mine Safety and Health Administration

Michael R. Van Dorn	Supervisory Mine Safety and Health Inspector
Brandon D. Olivier	Mine Safety and Health Inspector
Paul B. Shelby	Mine Safety and Health Specialist
Michael P. Snyder, P.E.	Mining Engineer

APPENDIX B

CONCEPTUALIZED VIEW OF THE ACCIDENT SCENE



APPENDIX C

VICTIM INFORMATION

Accident Investigation Data - Victim Information
Event Number: 6 6 0 5 2 7 2

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:
Michael W. Charles	*M*	*58*	*01 Fatal*

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 04/17/2013 b.Time: 1:00	*a. Date: 04/16/2013 b.Time: 18:30*

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
080 shaftman	*039 replacing a bushing on a skip hoist*	Yes X No

10. Experience	a. This Work Activity:	b. Regular Job Title:	c: This Mine:	d. Total Mining:
Years	*14*	*14*	*32*	*32*
Weeks	*20*	*20*	*10*	*10*
Days	*4*	*4*	*0*	*0*

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
089 piece of salt	*170 blunt force trauma*

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

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: X | CPR: X | EMT: | Medical Professional: | None:

16. Part 50 Document Control Number: (form 7000-1)
17. Union Affiliation of Victim: *2605 United Steel Workers of America*