

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

REPORT OF INVESTIGATION

**Surface Metal Mine
(Copper)**

**Fatal Fall of Material Accident
January 9, 2010**

**Ames Construction Inc.
Contractor ID No. U82
at
Freeport McMoRan Miami Inc.
Freeport McMoRan Miami Inc.
Miami, Gila County, Arizona
Mine ID No. 02-00112**

Investigators

**Melvin M. Lapin
Mine Safety & Health Inspector**

**Kenneth W. Valentine
Mine Safety & Health Inspector**

Originating Office

**Mine Safety and Health Administration
Rocky Mountain District
PO Box 25367 DFC
Denver, CO 80225-0367
Richard Laufenberg, District Manager**

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OVERVIEW

Estevan R. Benavidez, laborer, age 20, was fatally injured on January 9, 2010, when a suspended 400-foot long section of 24-inch diameter high density polyethylene pipe fell and struck him. The pipe was being installed into a new pregnant leach solution reservoir.

The accident occurred because contractor management policies and controls were inadequate. A risk assessment to discuss the task and identify possible hazards was not conducted prior to placing the pipe. The procedures failed to ensure that persons stay clear of suspended loads.

GENERAL INFORMATION

Freeport McMoRan Miami Inc., a surface copper mine facility, owned and operated by Freeport Miami Inc., was located in Miami, Gila County, Arizona. The principal operating official was Michael Ciricillo, vice-president/general manager. The facility employed 124 persons working two, 12 hour shifts, seven days a week.

Copper ore-bearing rock was drilled, blasted in the open pit, and transported by haul truck to heap leach pads and overburden deposition areas. The ore was treated with sulfuric acid that created a pregnant leach solution. Copper was recovered from the pregnant leach solution using a solvent extraction process and then processed into copper rod. The finished products were sold to commercial industries.

Ames Construction Inc., located in Phoenix, Maricopa County, Arizona, was contracted by Freeport McMoRan Miami Inc., to install a new leaching facility. The principal operating official was James Wells, superintendent. Construction of this leaching facility began in August 2009.

The last regular inspection at this operation was completed on November 24, 2009.

DESCRIPTION OF ACCIDENT

On the day of the accident, Estevan R. Benavidez (victim), reported for work at 6:30 a.m., his normal starting time. He attended a general safety meeting and a job specific safety meeting. Kevin Frantti, foreman, assigned Benavidez and Michael Geil, laborer, to cut a 700-foot long section of high density polyethylene (HDPE) pipe in half, and then fuse a section of the pipe to a previously installed pipe elbow.

About 9:00 a.m., Benavidez, Geil, Frantti, W. James Marriage, equipment operator; Steven Engles, equipment operator; and Gabriel Garcia, mechanic, began the process of installing a 400-foot section of 24-inch diameter HDPE pipe into the No. 27 reservoir. This pipe was being placed next to two other pipes which had been recently installed.

Two excavators positioned 225 feet apart were used to install the pipe into the reservoir. One excavator was positioned near the reservoir spillway and supported the pipe. The other excavator pushed the pipe down the declining spillway and into the pond from the far end of the 400-foot section of pipe. To facilitate installation, the pipe being installed was placed onto the top of an adjacent pipe which had been previously installed. About 114 feet of the pipe had been pushed down the spillway when it became jammed and would not move any further.

Frantti, Geil, and Benavidez placed three choker-type tag lines on the pipe to remove it from the top of the adjacent pipe. Frantti was about eight feet from the east end of the pipe and Benavidez was about four feet from the same end. Geil was at the end of the pipe. Benavidez used an eight foot long strap to pull on the pipe. The strap was rigged as a choker providing Benavidez about six inches of tag line.

As the pipe was pulled, it suddenly shifted, striking Frantti, and knocking him several feet backward but he was not injured. The pipe also struck Benavidez, knocking him to the ground, and landing on his torso and chest. An excavator was then used to free Benavidez.

An emergency response team from Freeport McMoRan Miami Inc., was summoned and responded to the accident site. Emergency Medical Services transported Benavidez to the local hospital helicopter launch pad. He was then transported by medical helicopter to a medical center where he was pronounced dead by the attending physician at 1:10 p.m. The cause of death was blunt force trauma.

INVESTIGATION OF ACCIDENT

The Mine Safety and Health Administration (MSHA) was notified of the accident at 11:17 a.m. on January 9, 2010, by a telephone call from Drew Borcharding, senior safety and health professional, Freeport McMoRan Miami Inc., to MSHA's emergency call center. Michael Dennehy, assistant district manager, was notified and an investigation was started the same day. A Part 50 order was issued to Ames Construction Inc., for untimely reporting and a Part 50 citation was issued for altering the accident site. A Part 50 citation was issued to Freeport McMoRan Miami Inc., for untimely reporting. An order was issued under the provisions of Section 103(j) of the Mine Act to ensure the safety of the miners.

MSHA's investigators traveled to the mine, conducted a physical inspection of the accident scene, interviewed employees, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine and contractor management and employees, and the State of Arizona Mine Inspector's Office.

DISCUSSION

Location of the Accident

The accident occurred on the west end of the No. 27 pregnant leach solution reservoir spillway that had a slope of about 7.5 percent. The No. 27 reservoir was 810 feet long, 525 feet wide, and designed to hold about 41.2 million gallons of liquid. It was lined with an impermeable geomembrane.

Weather

The weather at the time of the accident was mostly clear with a slight wind and a temperature of 51 degrees Fahrenheit. Weather was not considered to be a factor in the accident.

High Density Polyethylene Pipe

The High Density Polyethylene (HDPE) plastic pipe was used to convey pregnant leach solution from the leach fields to the pregnant leach solution reservoirs. The 1-1/2 inch thick wall pipe had a 24-inch outside diameter. The 400-foot section that struck the victim weighed about 20,432 pounds. The end of the pipe involved in the accident was suspended 24 inches above ground by being placed on the previously installed adjacent pipe. The pipe suspended by the other excavator was about 6 feet off the ground and 118 feet from the end of the pipe.

Excavators

One of the excavators involved in the accident was a Caterpillar, Model 375 excavator, with an operating weight of 178,800 lbs., and a lifting capacity of 65,600 lbs. The excavator was inspected and no defects were found

The other excavator involved in the accident was a Caterpillar, Model 330-BL excavator, with an operating weight of 75,000 lbs., and a lifting capacity of 37,630 lbs. The excavator was inspected and a non-contributory citation was issued for a defective work light.

Training and Experience

Estevan R. Benavidez, victim, had 21 weeks of mining experience. Benavidez had received training in accordance with 30 CFR Part 48.

Kevin Frantti, foreman, had 12 years of experience. Gabriel Garcia, mechanic, had 9 years of experience. Michael Geil, laborer, had 17 weeks of experience. Steve Engles, equipment operator, had 4 years of experience. W. James Marriage, equipment operator had 22 years of experience. All five miners had received training in accordance with 30 CFR Part 48.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted and the following root cause was identified:

Root Cause: Contractor management policies and work procedures were inadequate and failed to ensure that persons stay clear of suspended loads.

Corrective Action: The contractor operator amended the written work procedure for moving, installing, and guiding HDPE pipe. When using tag lines, persons will remain at least twenty feet away from suspended loads or be protected by equipment or other substantial barriers.

CONCLUSION

The accident occurred because contractor management policies and controls failed to identify the risks associated with the task. A risk assessment to discuss the task and identify possible hazards was not conducted prior to placing the pipe. The procedures failed to ensure that persons stay clear of suspended loads.

ENFORCEMENT ACTIONS

Issued to Freeport McMoRan Miami Inc.

Order No. 6452935 was issued on January 9, 2010, under the provisions of Section 103(j) of the Mine Act:

A fatal accident occurred at this operation on January 9, 2010, when an employee was struck by a section of pipe. James Eubanks, MSHA supervisor, issued a verbal order to Tom Howard, safety manager, Ames Construction Inc., at 1:45 p.m. and Drew Borcharding, safety professional, Freeport McMoRan Miami Inc., at 1:48 p.m., securing the area where the accident occurred. This order is issued to ensure the safety of persons at this operation and prohibits any work in the affected area. The mine operator shall obtain approval from an Authorized Representative for all actions to restore operations in the affected area.

The order was subsequently modified to a Section 103(k) order and was terminated on January 14, 2010. Conditions that contributed to the accident no longer exist.

Issued to Ames Construction Inc.

Citation No. 6459207 was issued on January 31, 2010, under the provisions of Section 104(d)(1) of the Mine Act for a violation of 56.16009:

A fatal accident occurred at this operation on January 9, 2010, when a contract laborer was struck and crushed by a suspended section of pipe. The victim, a co-worker, and the foreman were guiding the pipe, exposing them to the hazard of working near a suspended load. The foreman engaged in aggravated conduct constituting more than ordinary negligence in that he was directly supervising and participating in this task. This is an unwarrantable failure to comply with a mandatory standard.

This citation was terminated on January 31, 2010. The contractor amended the written work procedure for moving, installing, and guiding pipe. All persons have been trained on the amended procedures.

Approved by,

Date: March 30, 2010

Richard Laufenberg
District Manager

LIST OF APPENDICES

Appendix A--Persons Participating in the Investigation

Appendix B--Victim Data Sheet

APPENDIX A

Persons Participating in the Investigation

Freeport McMoRan Miami Inc.

David Wales

Andrew Siersma, Sr.

Drew Borcharding

Health & Safety Manager

Health & Safety Professional

Health & Safety Professional

Ames Construction Inc.

Thomas Howard

James Wells

Regional Safety Manager

Superintendent

Mine Safety and Health Administration

Melvin M. Lapin

Kenneth W. Valentine

Mine Safety & Health Inspector

Mine Safety & Health Inspector

Arizona State Mine Inspector's Office

Rex Gennicks

William Schifferns

Deputy Mine Inspector

Deputy Mine Inspector

APPENDIX B

Accident Investigation Data - Victim Information

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



Event Number: 1108310

Victim Information: 1																							
1. Name of Injured/Ill Employee: <i>Estevan R. Benavidez</i>				2. Sex <i>M</i>		3. Victim's Age <i>20</i>		4. Degree of Injury: <i>01 Fatal</i>															
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 01/09/2010 b. Time: 13:10</i>								6. Date and Time Started: <i>a. Date: 01/09/2010 b. Time: 6:30</i>															
7. Regular Job Title: <i>116 Laborer</i>						8. Work Activity when Injured: <i>028 Installing Pipe</i>						9. Was this work activity part of regular job? <div style="text-align: right;">Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div>											
10. Experience		Years	Weeks	Days	b. Regular		Years	Weeks	Days	c. This		Years	Weeks	Days	d. Total		Years	Weeks	Days				
a. This					Job Title:					Mine:					Mining:								
Work Activity:		<i>0</i>	<i>4</i>	<i>0</i>			<i>0</i>	<i>7</i>	<i>0</i>			<i>0</i>	<i>7</i>	<i>0</i>			<i>0</i>	<i>21</i>	<i>1</i>				
11. What Directly Inflicted Injury or Illness? <i>127 Pipe fell on victim</i>										12. Nature of Injury or Illness: <i>170 Crushing</i>													
13. Training Deficiencies:																							
Hazard:				New/Newly-Employed Experienced Miner:								Annual:				Task:							
14. Company of Employment: (If different from production operator) <i>Ames Construction Inc.</i>																Independent Contractor ID: (if applicable) <i>U82</i>							
15. On-site Emergency Medical Treatment:																							
Not Applicable:				First-Aid:				CPR:				EMT: <input checked="" type="checkbox"/>				Medical Professional:				None:			
16. Part 50 Document Control Number: (form 7000-1)										17. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>													