MAI-2018-01

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

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Construction Sand & Gravel)

Fatal Powered Haulage Accident
January 25, 2018

Hallett Materials
Stripping #1
Woodbine, Harrison County, Iowa
Mine I.D. No. 13-01825

Investigators

Thaddeus J. Sichmeller
Mine Safety and Health Inspector

Fred T. Marshall
Mechanical Engineer

Originating Office

Mine Safety and Health Administration
North Central District
515 West First Street Room 323
Duluth Minnesota, 55802-1302

Christopher A. Hensler, District Manager

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OVERVIEW

Christopher W. McMullen, a 38 year old equipment operator, died on January 25, 2018, when the articulated haul truck he was driving left the roadway, traveled through a berm, and into an ice covered pond.

GENERAL INFORMATION

Hallett Materials Stripping (Hallett) owns and operates Stripping #1, a portable sand and gravel operation headquartered in Ankeny, Polk County, Iowa. Jim Gauger, President, is the principal operating official. At the time of the accident, the company operated the portable plant in Woodbine, Harrison County, Iowa, five days per week with two, twelve-hour shifts per day. Stripping #1 began work at the Woodbine location on December 19, 2017.

Hallett extracts sand and gravel with an excavator from a pit located in the southwest sector of the mine. The material is then loaded into articulated haul trucks and transport approximately one mile to a stockpile located in the eastern sector of the mine. Hallett planned to mill the material on a later date for use in the construction industries.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection on the portable plant on November 8, 2017. However, the portable operation was working at a different location.

DESCRIPTION OF THE ACCIDENT

On January 24, 2018, Christopher W. McMullen (victim) reported to work at 6:00 p.m., at which time Larry Ritter, leadman, assigned mobile equipment to the mid-night shift crew, conducted a safety meeting and instructed them to haul sand and gravel from the pit area. Ritter assigned McMullen, Robert Weckwerth, equipment operator, Ronald Vonderharr, equipment operator, and Daniel Blackwell, equipment operator, to operate the articulated haul trucks. In addition, Ritter instructed Bruce Hein, equipment operator, to operate the motor grader and the bulldozer. Steve Reetz, equipment operator, was assigned to operate the excavator for loading trucks.

Hein and Ritter made necessary repairs to the haul road at the start of the shift. After repairing the roadway, Ritter drove the dozer to the stockpile area to push material, and Hein transferred to a haul truck.

At approximately 9:00 p.m., Weckwerth, Vonderharr, Hein and McMullen took a fifteen minute break and discussed slowing down in order to prevent vehicle congestion in the loading area. Based on interviews, McMullen commented his cell phone battery was low.

At approximately 10:00 p.m., Weckwerth and Vonderharr noted McMullen was not hauling. They believed he took a break. Through interviews, investigators discovered McMullen had taken a break the night before for several hours. Ritter instructed employees to take a break when necessary if they felt fatigued.

At 11:30 p.m., the crew took a meal break in the job trailer. McMullen and Blackwell commonly stayed in their trucks during meal breaks. Vonderharr sent a text message to McMullen during the break but did not receive a response. The crew believed his phone's battery had died. Vonderharr and Weckwerth messaged one another that McMullen likely found a spot to rest. At approximately 12:00 a.m., on January 25, 2018, the crew returned to work and

began hauling again. At approximately 3:00 a.m., Vonderharr still had not seen McMullen. He tried calling, but the call went to McMullen's voicemail.

At approximately 4:00 a.m., Vonderharr stopped Ritter, who was returning from the pit, to tell him he had not seen McMullen. Ritter attempted to phone McMullen but received no answer. Ritter searched the mine site and attempted to reach McMullen on the CB radio. Vonderharr and Weckwerth also drove around the mine looking for McMullen.

At approximately 5:11 a.m., Ritter saw what appeared to be McMullen's truck submerged in a pond that is adjacent to the operator's job trailer (Attachment C) and immediately called 911. Employees searched along the pond's banks and other locations in an effort to locate McMullen but did not find him.

Authorities dispatched emergency responders and dive teams to the scene. Divers were unable to enter the water initially due to ice surrounding the truck. Later that day, divers were able to safely enter the water, locate the victim in the truck cab, and begin recovery actions. Rescuers recovered the victim from the truck at 4:00 p.m., and first responders transported him to an area hospital. Doctors listed drowning as the cause of death.

INVESTIGATION OF THE ACCIDENT

Ritter called the Department of Labor's National Contact Center (DOLNCC) at 5:36 a.m. on January 25, 2018. The DOLNCC contacted William H. Soderlind, MSHA North Central District Field Office Supervisor. Upon arrival at the mine, MSHA issued an order under Section 103(k) of the Mine Act to ensure the safety of the miners and began the investigation the same day.

MSHA's accident investigation team traveled to the mine, conducted a physical examination of the accident scene, interviewed employees, reviewed training and work procedures. MSHA conducted the investigation with the assistance of mine management, company legal counsel, Volvo Construction equipment representatives, Iowa medical examiner, fire department captain and manager of Arrow towing company. There were no eyewitnesses to the accident.

DISCUSSION

Location

The accident occurred in the mine's northern pond, located near the job trailer. The depth of the pond varied from twenty to thirty feet. Winter weather conditions caused the pond to freeze, and ice thickness varied between eight to ten inches. The pond had a surrounding four foot high earthen berm located along the elevated roadway. The berm met requirements of 30 CFR 56.9300.

Recovery operations disturbed the ground surrounding the accident scene, hampering investigator's ability to identify definitive tire tracks for the truck. Investigators were unable to determine the truck's direction when it struck the berm. However, interviews with Harrison

County Emergency Management personnel stated the truck appeared to strike the berm without any defensive action. A written statement to local law enforcement by Weckwerth indicated the tire tracks were "very square to the berm" and law enforcement documents indicate that the truck hit the berm straight on without deviation.

The truck was traveling on relatively flat and level terrain. Mine management maintained the gravel haul roads in good condition. MSHA determined the mine roadways were wide enough to permit safe passage of approaching vehicles.

Articulated Haul Truck

The vehicle involved in the accident was a Volvo, six-wheel, articulated haul truck, Model Number A40G. The investigation team examined the truck's suspension, steering and service brake components and found no evidence that the truck's condition contributed to the accident. In addition, investigators removed and tested the headlight bulbs and determined they were functional.

The truck's maximum payload was 85,980 pounds. Investigators found no evidence to indicate overloading had occurred. The manufacturer equipped the truck with a series of electronic control modules, which monitored machine functions, stored various machine parameters, alarms and error codes, and periodically transmitted the logged information to Volvo's CareTrack system via a wireless connection. Based on a review of the CareTrack system, investigators noted the key switch was cycled to "on" position at 6:40 p.m. on the night of January 24, 2018. This was the last electronic contact between the truck and the CareTrack system. Investigators reported the truck was scheduled to contact the CareTrack system at approximately midnight during the victim's work shift, but the truck made no contact. Based on this information, investigators believe the truck went into the pond before midnight.

Weather

Investigators reported a temperature range of 20-25 degrees Fahrenheit and clear skies at the time of the accident.

Training and Experience

Christopher W. McMullen had four years and thirty weeks total mining experience and was transferred from another mine site operated by Oldcastle Materials, Inc. (Oldcastle). MSHA reviewed the training records, which revealed the victim had received new miner and annual refresher training while working at other sites controlled by Oldcastle. In addition, the company provided the victim's task training records, which included health and safety aspects of operating the Volvo articulated truck.

During the course of the investigation, MSHA found evidence the victim had received site specific hazard training at the Woodbine, Iowa location. The victim had worked at the

Woodbine site for approximately 5 weeks; therefore, he was also familiar with the work environment at the time of the accident.

CONCLUSION

Christopher W. McMullen died when the articulated haul truck he was operating left the road and entered a frozen pond. He was not wearing a seat belt. There were no eye witnesses to the accident and, from the investigation, the investigators were unable to determine why the driver was unable to maintain control of equipment.

ENFORCEMENT ACTIONS

Order No. 9382029 was issued on January 25, 2018, under the provisions of Section 103(k) of The Mine Act:

A fatal accident occurred at this operation on 01-25-2018, when a miner over traveled the berm along the haul road into the adjacent water filled pit. This order is issued to assure the safety of all persons at this operation. It prohibits all activity from the scale house south across the pond and west from the scale house to where the Volvo haul trucks are blocking the haul road from the west and all equipment with-in this area until MSHA has determined it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the affected area. This 103-K order was verbally issued to Scott Bohm at 821 on 1-25-2018.

Approved by:

_____ _____

Christopher A. Hensler Date
District Manager

APPENDIX A

Persons Participating in the Investigation
(Persons interviewed are indicated by a * next to their name)

Hallett Materials

Kyle Timmer	General Manger
Alan Halgerson	Operations Manager
Scott Bohm*	Safety Director
Randy Chappel	Safety Director
Michael Wolthuis*	Supervisor
Larry Ritter*	Leadman
Bryan Cummins	Environmental Safety and Health
Lee Cole	Environmental Safety and Health
Marvin Hose	Miners' Representative
Craig Hal	General Counsel
Xavier Balderas	General Counsel
Robert Weckwerth*	Equipment operator
Ronald Vonderharr*	Equipment operator
Daniel Blackwell*	Equipment operator
Bruce Hein*	Equipment operator
Steve Reetz	Equipment operator

Iowa State Medical Examiner

Dennis Klein	Medical Examiner

Woodbine Fire & Rescue

Clark Smith*	Captain

Arrow Towing

Tony Carr	Operations Manager

Mine Safety and Health Administration

Thaddeus J. Sichmeller	Mine Safety and Health Inspector
Fred. T. Marshall	Mechanical Engineer

Volvo Construction Equipment North America, LLC

John C. Bartz*	Director, Product Assurance & Regulation

APPENDIX B

Victim Information:	**1**																		
1. Name of Injured/Ill Employee:					2. Sex		3. Victim's Age						4. Degree of Injury:						
Christopher W. McMullen					*M*		*38*						*01 Fatal*						
5. Date (MM/DD/YY) and Time (24 Hr.) Of Death:							6. Date and Time Started:												
a. Date: 01/25/2018			*b.Time: 05:00*				*a. Date: 01/24/2018*					*b.Time: 18:00*							
7. Regular Job Title:					8. Work Activity when Injured:								9. Was this work activity part of regular job?						
176 Truck driver					*055 Operate haulage truck*								Yes	*X*	No				
10. Experience	Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days				
a. This Work Activity	*4*	*38*	*5*	b. Regular Job Title	*4*	*38*	*5*	c. This Mine	*0*	*4*	*0*	d. Total Mining	*4*	*38*	*5*				
11. What Directly Inflicted Injury or Illness?							12. Nature of Injury or Illness:												
126 Water							*110 Drowning*												
13. Training Deficiencies:																			
Hazard:			New/Newly-Employed Experienced Miner:						Annual:				Task:						
14. Company of Employment: (If different from production operator)																			
												Independent Contractor ID: (if applicable)							
15. On-site Emergency Medical Treatment:																			
Not Applicable:	*X*	First-Aid:		CPR:		EMT:			Medical Professional:			None							
16. Part 50 Document Control Number: (form 7000-1)				*2528782*					17. Union Affiliation of Victim:			*Operators Union 2678*							

APPENDIX C

Figure 1: Overview Of Accident Area (Not To Scale)