MAI-2017-04

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

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Limestone)

Powered Haulage Accident
June 8, 2017

Hastie Mine
Hastie Mining
Cave In Rock, Hardin County, Illinois
Mine ID No. 11-01023

Investigators

James A. Hines
Mine Safety and Health Inspector

Eric W. Crum
Mine Safety and Health Inspector

Originating Office

Mine Safety and Health Administration
North Central District
515 West First Street, Room 323
Duluth, MN 55802-1302
Christopher A. Hensler, District Manager

OVERVIEW

On June 8, 2017, James H. Mangus, Jr. (age 56), truck driver, was fatally injured when his truck overturned due to a stockpile foundation failure.

The accident occurred because management did not have proper procedures in place to ensure:

- berms, bumper blocks, safety hooks or similar impeding devices were provided at dumping locations;
- dumping locations were visually inspected before work commenced;
- loads were dumped at a safe distance back from the edge where the bank or area was unstable;
- task training was given when a miner was assigned a task and had no past or similar experience with;
- seat belts were worn in all haulage trucks.

GENERAL INFORMATION

The Hastie Mine is a surface limestone crushing operation, owned and operated by Hastie Mining and located in Hardin County, Cave-in-Rock, Illinois. The principal operating official is Donald Hastie, Partner. The limestone is blasted and mined from a multiple bench open pit quarry and is crushed and milled in a multi-step process. The finished product is either loaded on customer trucks or taken to two milling plants adjacent to the mine for further processing.

Total employment at the mine is 28 miners. The mine typically operates five days a week, with one production shift and one maintenance shift each day. The production shift starts at 6:00 a.m. and continues until 4:00 p.m.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection on March 15, 2017.

DESCRIPTION OF ACCIDENT

James H. Mangus, Jr., reported for work at 6:00 a.m., his normal starting time. Mangus was normally tasked with hauling rock from the pit to the Big Plant with a Caterpillar 777F haul truck. The Big Plant broke down the day before, so Mangus and his crew began moving loads of CA5 material (1 1/2″ stone) from the Little Plant to the stockpile area. Later, Mangus switched and started hauling CA6 material (subbase granular backfill) to the stockpile.

At 8:00 a.m., James Smock, loader operator, loaded Mangus with the first load of CA6 to deliver to the stockpile. At the stockpile, Mangus backed his truck within approximately two feet of the edge of the stockpile and prepared to dump. Danny Hicks, plant operator, saw material under the right rear tire of Mangus's truck slough and the tire drop over the edge, then material under the left rear tire slough and the left side of the truck drop. The entire truck slid over the edge of the stockpile and stood nearly vertical with the windshield pointed up. The haul truck fell over backwards, coming to rest on its roof.

Randall Conkle, yard loader operator, was pushing up the CA5 pile and heard the haul truck land on its roof behind him. Conkle was the first person to the truck followed by Hicks. Both Conkle and Hicks observed Mangus lying on the cab's roof through the windows. Hicks broke the side window of the cab to gain access to Mangus, who was unresponsive. While Hicks worked to gain access into the cab of the haul truck, Conkle called for help on the CB radio.

Doug Cook, a customer truck driver, heard the call as he was scaling out his truck load and noticed Donald Hastie, partner, sitting in his pickup truck nearby. Cook notified Hastie there had been an accident at the CA6 stockpile area. Hastie drove up to the CA6 stockpile and saw Jeffery Seymore, a contract employee for Pollard and Sons

Excavating and a Mine Emergency Technician, performing CPR on the victim. Hastie returned to the scale house and called 911 at 8:05 a.m. and then returned to the accident scene. Seymore was still administering CPR, assisted by Steven Hopkins, crusher operator.

They continued CPR until first responders arrived and took over victim care at 8:23 a.m.

INVESTIGATION OF ACCIDENT

Gerald D. Holeman, North Central Assistant District Manager, was contacted by Don Hastie, on June 8, 2017 and an investigation began the same day. An order was issued pursuant to Section 103(k) of the Mine Act to ensure the safety of the miners.

MSHA's accident investigation team conducted a physical inspection of the accident site, interviewed employees, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and employees.

DISCUSSION

Location of the Accident

The accident occurred at the CA6 stockpile. The area directly involved with the accident is at the end of the stockpile and is used to load customer trucks, as well as to dump finished product from the plant.

Haul Truck

The haul truck involved in the accident was a Caterpillar 777F (100 ton), year 2010, serial # JRP02420. The haul truck had been purchased by Hastie Mining in December of 2010. The investigation team found no evidence that the truck's condition was a factor in the accident based on an eyewitness account and post-accident observation. MSHA tested the seat belt in the haul truck and did not find any indication of defects.

Weather

Weather conditions were calm and clear at the time of the accident, and it was 62 degrees with a 5 to 6 mile an hour wind speed. Weather was not considered to be a factor.

Training and Experience

James H. Mangus, Jr. (victim) had a total of 3 years and 5 weeks of mining experience, all at Hastie Mining. He had completed task training for operation of the Caterpillar 777F haul truck.

MSHA's review of training records and the company training plan revealed Mangus did not receive task training on proper stockpiling procedures and dump locations requiring visual inspection prior to work commencing. MSHA issued a contributory citation for failure to task train on stockpile procedures under 30 C.F.R. 46.7(a).

ROOT CAUSE ANALYSIS

MSHA conducted a root cause analysis and identified the following causes:

Root Cause: The operator's procedures and controls were inadequate. The mine operator failed to ensure berms, bumper blocks, safety hooks or similar impeding devices were provided where there was a hazard of over traveling or overturning.

Corrective Action: The mine operator has installed berms and trained miners in the requirements of the standard and instituted policy to ensure future compliance. They have implemented procedures closing stockpiles with physical barriers when material is being removed.

Root Cause: The mine operator failed to ensure dumping locations are visually inspected before work begins at those locations.

Corrective Action: The mine operator implemented a policy ensuring visual inspections occur before work begins at dumping locations and as ground conditions warrant. Mine management has included this in their work place examination.

Root Cause: The mine operator failed to ensure miners were dumping loads at a safe location back from the edge of an unstable area.

Corrective Action: The mine operator has implemented a policy and has trained miners to ensure all loads will be dumped at safe location.

Root Cause: The mine operator failed to provide task training for miners performing stockpiling activities.

Corrective Action: The mine operator provided task training to miners who perform stockpiling and work on dump sites.

Root Cause: The mine operator failed to ensure miners wore seat belts when operating haulage trucks.

Corrective Action: Miners were re-trained in the requirements of seat belt usage.

CONCLUSION

James H. Mangus, Jr. was fatally injured when his truck overturned due to a stockpile foundation failure. The accident occurred because the mine operator failed to ensure berms, bumper blocks, safety hooks or similar impeding devices were provided at dumping locations where there was a hazard of over traveling or over turning. Additionally, the mine operator did not ensure dumping locations were inspected before dumping commenced at this location, and did not ensure loads were dumped from a safe distance from where ground may fail to support mobile equipment. Miners had not been trained in proper stockpiling procedures, and management failed to ensure miners always wore seat belts while operating haulage trucks.

ENFORCEMENT ACTIONS

Order No. 8945194 - **I**ssued on June 8, 2017, under the provisions of Section 103(K) of the Mine Act:

> *A fatal accident occurred at this operation on June 8, 2017, when a miner was attempting to dump processed rock off the CA6 stockpile. This order is issued to assure the safety of all persons at this operation. It prohibits all activity at the CA6 stockpile and the Caterpillar 777F serial number JRP02420 until MSHA has determined it is safe to resume normal mining operations in this 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.*

The order was terminated on June 19, 2017, when conditions contributed to the accident were corrected.

Citation No. 8950163 - Issued on June 26, 2017, under the provisions of Section 104(D)(1) of the Mine Act for violation of 30 CFR 56.9301:

> *A fatal accident occurred at this operation on June 8, 2017 when an equipment operator operating a Caterpillar 777F haul truck over turned from an elevated edge at the CA6 stockpiles dumping location. Berms, bumper blocks, safety hooks or similar impeding devices had not been provided at this dumping location and the truck traveled unimpeded to the stockpiles edge. At this point material sloughed off the pile, the truck dropped over the edge and overturned resulting in the trucks operator receiving fatal injuries. The mine operator engaged in aggravated conduct constituting more than ordinary negligence in he knew or should have known dump sites being used on site were not provided berms or similar impeding devices where there was a hazard of over traveling an elevated edge or overturning a vehicle. This violation is an unwarrantable failure to*

comply with a mandatory standard. Standard 56.9301 was cited 2 times in two years at mine 11-01023 (2 to the operator, 0 to a contractor).

The citation was terminated on June 26, 2017. Miners and mine management have been trained to ensure berms or similar impeding devices are provided at stockpile dump site locations as needed.

Order No. 8950164 - Issued on June 26, 2017, under the provisions of section 104(D) of the Mine Act for a violation of 56.9304(a):

An equipment operator operating a Caterpillar 777F haul truck was fatally injured when the dump site he was driving on sloughed off causing the truck to slide down the pile and overturn. Prior to dumping/work commencing the pile and dump site were not visually inspected. Trucks dump here daily as needed and the normal work practice allows a loader to load customer trucks below while haul trucks dump above making the ground in this area unstable. Without this visual examination a miner was allowed to enter the unstable area which resulted in fatal injuries. Mine management engaged in aggravated conduct constituting more than ordinary negligence when they knew or should have known the dump site had to be visually inspected prior to work commencing at this location. This violation is an unwarrantable failure to comply with a mandatory standard.

The citation was terminated on June 26, 2017. All dumping locations shall be visually inspected prior to work commencing and as ground conditions warrant terminating this citation.

Citation No. 8950165 - Issued on June 26, 2017, under the provisions of section 104(A) of the Mine Act for a violation of 56.9304(b):

A fatal accident occurred at this operation on June 8, 2017 when the operator of the Caterpillar 777F haul truck did not dump a safe distance back from an unstable edge. The driver of the haul truck traveled to the edge of the CA6 stockpile when the material underneath the truck began to slide downward, with this movement the truck went over the edge overturning and landing on its roof. Normal work practices allowed a loader to load customer trucks while at the same time allowing haul trucks to dump over the edge being loaded out of promoting the occurrence of unstable ground. As a result of not dumping from a safe location the operator of this haul truck received fatal injuries.

The citation was terminated on June 26, 2017. Training given to miners now requires them to dump on the bottom of piles being loaded out, terminating this citation.

Citation No. 8950166 - Issued on June 26, 2017, under the provisions of section 104(A) of the Mine Act for a violation of 46.7(a):

> *A fatal accident occurred on June 8, 2017 when the operator of a Caterpillar 777F haul truck was fatally injured while stockpiling material at the CA6 stockpile. The equipment operator had not been task trained in proper stockpiling procedures and was fatally injured when he failed to recognize hazards present at the stockpile area. Standard 46.7a was cited 1 time in two years at mine 11-01023 (0 to the operator, 1 to a contractor).*

The citation was terminated on June 26, 2017. All miners who are expected to stockpile have been task trained in proper stockpiling procedures, including recognition of hazards may be encountered while performing this task, terminating this citation.

Citation No. 8950167 - Issued on June 26, 2017, under the provisions of section 104(A) of the Mine Act for a violation of 56.14131(a):

> *A fatal accident occurred at this operation on June 8, 2017 when an equipment operator in a Caterpillar 777F haulage truck went over an elevated edge on the CA6 stockpile. As the truck slid over the edge it turned upside down and the operator of the truck not wearing a seat belt was thrown from the seat. The miner was found in the cab lying on the roof having received fatal injuries.*

The citation was terminated on June 27, 2017. Miners on site have been task trained in the use of seat belts and this citation is terminated.

Approved by:

_____ _____

Christopher A. Hensler, District Manager Date

APPENDIX A

Persons participating in the investigation

Hastie Mining

Donald Hastie – Owner/Partner
Robert Hastie – Owner/Partner
Randall Conkle – Yard Loader Operator
Dan Hicks – Plant Operator
Darius Lane – Truck Driver
Randy Barnard – Truck Driver
Charles Dale – Loader Operator
James Smock – Loader Operator
Jeffery Seymore – Contract Excavator Operator with Pollard & Sons Excavating

Mine Safety and Health Administration

Eric W. Crum …… Mine Safety and Health Inspector
James A. Hines …… Mine Safety and Health Inspector

APPENDIX B

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Degree of Injury:
James H. Mangus, Jr.	*M*	*56*	*01 Fatal*

5. Date (MM/DD/YY) and Time (24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 06/08/2017 b.Time: 08:10	*a. Date: 06/08/2017 b.Time: 06:00*

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
076 Haul Truck Driver	*055 Operating Haul Truck*	Yes *X* No

10. Experience	Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days
	a. This Work Activity				b. Regular Job Title				c. This Mine				d. Total Mining		
	3	*5*	*4*		*3*	*5*	*4*		*3*	*5*	*4*		*3*	*5*	*4*

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
002 Bodily Motion	*370 Multiple Injuries*

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: *X* | Medical Professional: | None:

16. Part 50 Document Control Number: (form 7000-1) *220171630009*	17. Union Affiliation of Victim: *9999 No Union*