

**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
September 16, 2013**

**Con-Agg of MO, LLC
Huntsville Quarry
Huntsville, Randolph County, Missouri
Mine ID No. 23-02004**

Investigators

**Robert D. Seelke
Supervisory Mine Safety and Health Inspector**

**Steven W. Thompson
Mine Safety and Health Inspector**

**Fred T. Marshall
Mechanical Engineer**

**Stephen D. Brill
Mine Safety and Health Specialist**

**Originating Office
Mine Safety and Health Administration
South Central District
1100 Commerce Street, Room 462
Dallas, TX 75242-0499
Michael A. Davis, District Manager**



OVERVIEW

On September 16, 2013, David A. Gully, Truck Driver, age 58, was killed after the haul truck he was operating went over a highwall. Gully was operating the haul truck on the haul road out of the pit to the primary crusher.

The accident occurred due to management's failure to install and maintain sufficient berms along the edge of the haul road. Gully did not maintain control of the truck and the truck traveled through the berm. Additionally, he was not wearing a seat belt and was ejected from the haul truck which contributed to the severity of his injuries.

GENERAL INFORMATION

Huntsville Quarry, a surface limestone operation, owned and operated by Con-Agg of MO, LLC (Con-Agg) is located near Huntsville, Missouri. The principal operating official is Ronald Simms, Quarry Manager. The mine operates one 8-hour shift per day, five days per week. Total employment is 13 persons.

Limestone is drilled, blasted, and loaded into haul trucks which transport broken rock to a hopper at the primary (jaw) crusher. The broken rock is crushed, screened and stockpiled. Finished products are sold for use in the construction industry.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this mine on August 6, 2013.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, September 16, 2013, David A. Gully (victim) started work at 6:30 a.m. He conducted a pre-operational inspection of his haul truck and attended a safety meeting in the lunch room. Gully then drove his haul truck to bench #2 in the pit and began hauling broken rock to the primary crusher. Gully arrived at the primary crusher with his first load of broken rock shortly after 7:00 a.m.

About 9:15 a.m., Gully was taking his fourteenth load of broken rock to the primary crusher. While traveling out of the pit, Gully maneuvered his truck through a 90-degree left turn at the top of incline #2 and started up incline #1. The truck then crossed the haul road from right to left, traveled through the berm on the left edge of the roadway, and went over the highwall. The truck traveled down the face of the highwall and flipped before coming to rest on bench #2. Gully was not wearing the seat belt provided in the haul truck and was ejected from the cab.

Zachary Johnston, Truck Driver, was in the pit and saw the haul truck travel over the highwall. Johnston told Brent Boss, Loader Operator, who was also in the pit. Boss attempted to contact Joseph Martin, Lead Man, and Greg Mclouth, Supervisor, by radio

to tell them about the accident. Donald Hurt, Crusher Operator, overheard Boss calling for help. Hurt radioed Martin at the scale house and asked him to go to the pit. He also radioed Deborah Tallman, Scale Clerk, and asked her to call Emergency Medical Services (EMS).

Johnston and Boss each drove to within 100 feet of Gully's truck and walked to the accident scene. Johnston determined that Gully did not have a pulse. EMS then arrived and summoned the medical examiner, who pronounced Gully dead at 9:40 a.m. The cause of death was attributed to blunt force trauma.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 9:39 a.m. by a telephone call from Greg Mclouth, Supervisor, to Robert Seelke, Supervisory Mine Safety and Health Inspector, Rolla, Missouri. Fred Gatewood, Assistant District Manager, was notified of the accident and an investigation started the same day. An order was issued pursuant to section 103(j) of the Mine Act to ensure the safety of miners. This order was modified to section 103(k) of the Mine Act when the first authorized representative arrived at the mine site. A Part 50 citation was issued for untimely reporting.

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 and employees.

DISCUSSION

Location of the Accident

The accident occurred on incline #1, a portion of the haul road leading out of the pit.

Haul Road

The haul road out of the pit consisted of three inclined ramps designated as incline #3, incline #2, and incline #1. Incline #3 started at the pit bottom and extended 409 feet to a nearly 180-degree turn into incline #2 which extended 840 feet to a 90-degree turn into incline #1. The truck the victim was operating traveled about 270 feet up incline #1 before crossing over the haul road and through the berm on the left side of the haul road.

The haul road along the section of incline #1, where the accident occurred, was 54 feet wide and had an inclined slope of 8 percent. The berm along the left side of the haul road consisted of large boulders of various sizes spaced 4-5 feet apart and about two feet from the highwall.

Haul Truck

The truck involved in the accident is a 1980 Caterpillar 773B haul truck. The truck has a rigid frame equipped with a Caterpillar 3412 diesel engine with a rating of 650 horsepower at 2200 RPM. The truck has an electronically controlled automatic transmission with seven forward speeds and one reverse speed. The truck has a nominal payload capacity of 50 tons.

The truck traveled through the berm and overturned as it fell 80 feet to bench #2, coming to rest generally on its left side. It sustained considerable damage to the wheel assemblies, steering system, hydraulic tank, brake system components and operator's cab. The truck's body was damaged preventing the engine from starting. The investigators tested several systems integral to the safe operation of the truck.

The damage sustained by the truck during the accident precluded a full evaluation of the primary and secondary steering systems. The secondary steering system functioned electrically but the primary and secondary pumps could not be tested for pressure and flow while on the truck.

The air-applied, spring-released accelerator control system functioned and no sticking or binding of the accelerator linkage was observed. The accelerator linkage modulated with the foot pedal position and spring-returned when the foot pedal was released.

The rear axle service and parking brakes on the truck were both capable of providing an estimated braking capacity of at least 0.06 g-forces deceleration at the truck's gross vehicle weight rating. All three cab controls, designed to apply the rear brakes while moving, were in functional condition. These controls included the service brake foot pedal, the retarder lever control, and the secondary brake control.

Field tests demonstrated that releasing the accelerator foot pedal would result in a maximum rolling stop distance of about 50 feet while the truck's transmission was in fourth gear with a wide open throttle and an empty bed.

Investigators estimated that the truck would have drifted only 17 feet across the haul road within the 50-foot stopping distance with the estimated 20-degree approach angle of the truck to the haul road berm; i.e., if the accelerator pedal was not depressed, the truck would have coasted to a stop before going over the highwall.

Three defective or missing check valves in the air system were not considered contributing factors to the accident because there were no significant air leaks identified prior to the accident.

The investigators determined the defects found on the truck did not cause the accident. The fully loaded truck going upgrade from the pit could have been stopped before going over the highwall by releasing the accelerator. The rear service brakes would have offered a degree of safety beyond coasting to a stop; however, the investigators could not determine the additional braking capacity of the front service brakes.

Weather

The weather on the day of the accident was overcast with a temperature of 60 degrees Fahrenheit. Weather was not considered a contributing factor to the accident.

TRAINING AND EXPERIENCE

David A. Gully had 25 years and 42 weeks of mining experience, all at this mine, and had operated a haul truck for 14 years and 16 weeks. A representative of MSHA's Educational Field Services reviewed the training records for Gully 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 that sufficient berms were provided and maintained where a drop-off existed along the haul road.

Corrective Action: Sufficient berms were provided along the haul road where a drop-off existed.

Root Cause: Management did not ensure that the victim wore the seat belt provided in the haul trucks.

Corrective Action: All haul truck operators were retrained regarding the importance of wearing the provided seat belt while operating mobile equipment.

CONCLUSION

The accident occurred due to management's failure to install and maintain sufficient berms along the edge of the haul road. Gully did not maintain control of the truck and the truck traveled through the berm. Additionally, he was not wearing a seat belt and was ejected from the haul truck which contributed to the severity of his injuries.

ENFORCEMENT ACTIONS

Issued to Con-Agg of MO, LLC

Order No. 8684690 - Issued on September 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:

A fatal accident occurred at this operation on September 16, 2013, when a haul truck driver went thru the berm and over the highwall. This order is issued to ensure the safety of all persons at this operation. It prohibits all activity in the east pit until MSHA has determined that it is safe to resume normal mining practices. The mine operator shall obtain prior approval from an authorized representative for all action to recover and restore operations to the affected area. A verbal 103(j) order was issued at 10:02 a.m.

Citation No. 6566852 - Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.9101:

A fatal accident occurred at this operation on September 16, 2013, when a loaded haul truck traveled through a berm (boulders) and over the highwall. The operator of the haul truck did not maintain control of the equipment while it was in motion.

Citation No. 6566853 - Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.14131(a):

A fatal accident occurred at this operation on September 16, 2013, when a loaded haul truck traveled through a berm (boulders) and over the highwall. The operator of the haul truck was not wearing the seat belt provided in the haul truck.

Citation No. 6566854 - Issued under provisions of Section 104(a) of the Mine Act for a violation of 30 CFR 56.9300(a):

A fatal accident occurred at this operation on September 16, 2013, when a loaded haul truck traveled through a berm (boulders) and over the highwall. Berms may have openings to the extent necessary for roadway drainage. However the berm in the vicinity of the accident consisted of boulders that were approximately 10 feet long and had openings of 4-5 feet between boulders, which openings were greater than the extent necessary for roadway drainage.

Approved: 
Michael A. Davis
District Manager

Date: 11/13/14

APPENDIX A

PERSONS PARTICIPATING IN THE INVESTIGATION

Con-Agg of MO, LLC

Alan Barnes	President
Ronald Simms	Quarry Manager
Greg Mclouth	Supervisor
Robert Cathy	Safety Team
Joseph Martin	Lead Man

Mine Safety and Health Administration

Robert D. Seelke	Supervisory Mine Safety and Health Inspector
Steven W. Thompson	Mine Safety and Health Inspector
Fred T. Marshall	Mechanical Engineer
Stephen D. Brill	Mine Safety and Health Specialist

APPENDIX B

AERIAL PHOTO OF PIT AND RAMPS



EXHIBIT C

Accident Investigation Data - Victim Information										U.S. Department of Labor									
Event Number: 6 6 0 8 6 7 8										Mine Safety and Health Administration									
Victim Information: 1																			
1. Name of Injured/Ill Employee: <i>David A. Gully</i>				2. Sex: <i>M</i>		3. Victim's Age: <i>58</i>		4. Degree of Injury: <i>01 Fatal</i>											
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 09/16/2013 b. Time: 9:15</i>										6. Date and Time Started: <i>a. Date: 09/16/2013 b. Time: 6:30</i>									
7. Regular Job Title: <i>176 haul truck driver</i>						8. Work Activity when Injured: <i>055 operating a haul truck</i>				9. Was this work activity part of regular job? Yes☒No									
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>14</i>	<i>16</i>	<i>0</i>			<i>14</i>	<i>16</i>	<i>0</i>			<i>25</i>	<i>42</i>	<i>0</i>			<i>25</i>	<i>42</i>	<i>0</i>
11. What Directly Inflicted Injury or Illness? <i>104 haul truck</i>										12. Nature of Injury or Illness: <i>370 blunt force trauma</i>									
13. Training Deficiencies:																			
Hazard:		New/Newly-Employed Experienced Miner:						Annual:		Task:									
14. Company of Employment: (if different from production operator) <i>Operator</i>														Independent Contractor ID: (if applicable)					
15. On-site Emergency Medical Treatment:																			
Not Applicable:		☒	First-Aid:		CPR:		EMT:		Medical Professional:		None:								
16. Part 50 Document Control Number: (form 7000-1)										17. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>									