

MAI-2017-002

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

REPORT OF INVESTIGATION

**Surface Non Metal Mine
(Sand)**

**Fatal Fall of Material Accident
March 14, 2017**

at

**Cottonwood #1204
Trinity Materials, Inc.
Ferris, Texas
Mine ID No. 41-04553**

Accident Investigators

**Homer Allen Pricer Jr.
Mine Safety and Health Supervisor**

**Lance Miller
Mine Safety and Health Inspector**

**Ray Hurtado
Mine Safety and Health Inspector**

**Originating Office
Mine Safety and Health Administration
South Central District
1100 Commerce Street RM 462
Dallas, TX 75242
Michael Davis, District Manager**

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OVERVIEW

On March 14, 2017, Julio C. Flores (age 52), a customer truck driver, was fatally injured when he exited the cab of his tractor trailer, walked to the rear of the trailer, and was engulfed by sand dumped from his trailer.

The accident occurred because the victim entered the area behind the raised trailer bed while unloading concrete sand material.

GENERAL INFORMATION

The Cottonwood #1204 Mine is a surface open pit, sand facility owned and operated by Trinity Materials, Inc. The mine is located in Kaufman County, Ferris, Texas and the principal operating official is Reid Essl, President. The facility employs 30 persons and operates two, twelve-hour shifts, six days a week.

Sand and gravel is removed from the pit by excavators and loaded into haul trucks. The material is taken to the dump hopper where it is then transported via an overland belt to the screening plant. The wet screening plant separates the material into masonry sand, concrete sand, pea gravel, and 1 inch rock. The finished material is loaded into over the road haul trucks and transported to other sites for use in construction.

The Mine Safety and Health Administration (MSHA) completed the regular inspection at Cottonwood #1204 mine on March 7, 2017.

DESCRIPTION OF ACCIDENT

Julio C. Flores, a customer truck driver/owner operator, arrived at the Cottonwood #1204 mine on March 14, 2017, at approximately 5:30 a.m., to get a load of concrete sand. Flores traveled to the load out area and a Cottonwood mine employee using a front end loader, dumped two loader buckets of concrete sand, weighing approximately 27 tons, into his end dump trailer. Once loaded, Flores traveled to the scale to receive his invoice. Scale House Operator/Office Assistant Pam Isaaks radioed to Flores and said he would need to get an empty weight of the truck and trailer because company policy states "an empty weight is required every 14 days," which was prompted by the computer system. Flores exited the scale and drove his tractor trailer to the designated area where drivers are instructed to dump. This was the last contact anyone at the mine site had with the victim until the body was discovered at 11:43 a.m. The truck had been spotted by various personnel in the raised position over the course of approximately six hours.

There were no eyewitnesses to the accident. The following is a list of events based on the investigation, observations and interviews.

Once at the dump area, it appears Flores set the park brakes on the end dump trailer and engaged the trailer's power take-off (PTO). Flores then set the revolution per minute (RPM) on the truck's engine to approximately 1600 rpms to allow the trailer to ascend faster. Flores exited the cab wearing his hard hat, carrying his safety vest and gloves and walked alongside of the truck to pull the air valve to release the air actuated "dogs" or latches for the dump gate. As the trailer was rising, Flores apparently walked to the rear of the dump trailer and was engulfed by the sand from the trailer.

At 10:56 a.m., Henry Casarres, Lead Man, was notified by a miner that the truck and trailer had been in the same spot with the engine running and dump bed in the air for several hours. Casarres went to the location of the truck. He could not locate the driver and called Robert Villa, Plant Manager, to explain the situation. Villa instructed Isaaks to contact CKJ trucking, the haul broker. CKJ Trucking Manager Clint De Lange called Flores's cell phone which could be heard ringing in the cab of the truck. Since mine employees had already searched the mine, Villa instructed Casarres to start digging in the dump pile behind the trailer. At approximately 11:20 a.m., Casarres went to the lunch room to get shovels and the mine employees began digging. Mine management called the MSHA Dallas field office and told them they had a man missing.

At 11:43 a.m. Flores was found at the bottom of the pile of dumped concrete sand and 911 was called. Mine employees began first aid on Flores until it was determined he had no pulse. Kaufman County EMS and Sheriffs along with Rosser Volunteer Fire Department arrived at the scene a short time later.

The autopsy results indicated no trauma to the head or body and the cause of death was listed as mechanical asphyxia and smothering.

INVESTIGATION OF ACCIDENT

Arturo Munoz, Safety Manager, notified MSHA of the accident at 11:54 a.m. CST., on March 14, 2017, by phone to the Department of Labor National Contact Center (DOLNCC). The DOLNCC notified Elwood Burriss, District Staff Assistant, and an investigation was started the same day. An order was issued under the provisions of Section 103(k) of the Mine Act to insure the safety of the miners.

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

DISCUSSION

Location of the Accident

The accident occurred at the designated dump area immediately adjacent to the main haul road, located on the east side of the primary sand plant. The victim's truck was parked on relatively dry and level ground.

Weather

The weather at the time of the accident was clear, calm winds and a temperature approximately 34 degrees Fahrenheit. Weather was not considered to be a factor in the accident.

Truck/Trailer Information

The 2009 Kenworth tractor involved in the accident was an over the road truck. The end dump trailer was a 1998 Travis body semi-trailer. The truck and trailer were of the type commonly used on public highways. A warning sign attached to the trailer stated "stand clear of gate while unloading."

The PTO on this tractor trailer is a system comprised of a splined output shaft on the truck, designed so that a PTO shaft can be easily connected and disconnected, with a corresponding input shaft on the

application end to the trailer. The PTO allows implements to draw energy from the truck's engine.

Service Technician (Premier Truck Group) Inspection

On March 17, 2017, at approximately 07:30 a.m., Rick Allen, Service Technician, met with the investigation team to evaluate and examine the tractor truck and trailer. The technician and investigation team performed and identified the following:

- Conducted a pre-operational inspection to determine if it was safe to examine and operate the truck in its current state. It was necessary to repair two air lines to safely lower and secure the trailer.
- Performed a diagnostics test on the truck to determine if there were any mechanical or electrical issues. No defects were found.
- Inspected the truck's PTO system and determined the PTO was burned up but likely suffered this damage due to the length of time the truck was idling at high rpm.
- Conducted a brake check measurement of the linkage which did not indicate any safety issues.
- Examined the truck tires and determined they were properly inflated and in good condition.
- Tested the trailer gate latching mechanism ('dogs'). They were found to latch and hold as designed.

Training and Experience

Flores had 13 years of experience driving an over the road semi-truck. For the last 7 years, Flores frequented this mine site to pick up and transport material as needed. Company Policy/Procedures Training provided to customer truck drivers includes: observe and obey all traffic control signs, speed limits, warnings and exits; when necessary, to get out of your vehicle, park in a designated parking area; never exit the vehicle when being loaded; and do not stand behind equipment while unloading. All aggregate haulers are required to report to the office/scale house or point of contact prior to starting work.

ROOT CAUSE ANALYSIS

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

Root Cause: The customer truck driver failed to stand clear of the trailer gate while unloading material.

Corrective Action: Evaluate the effectiveness of Site-Specific Hazard Awareness Training provided to customer truck drivers to ensure that all hazards associated with each task are identified and understood. Customer truck drivers should follow warning signs and equipment labels and follow company's policies and procedures while on mining properties.

CONCLUSION

A customer truck driver was engulfed in sand when he walked behind his tractor trailer while dumping a load of concrete sand. The accident occurred because the customer truck driver did not maintain a safe distance from the rear of trailer where the sand material was being unloaded.

Approved: _____ *Date:* _____

Michael A. Davis
District Manager

**Appendix A
Persons Participating in the Investigation**

Trinity Materials, INC.

Henry Casarres	Lead-man
Robert Villa	Plant Manager
Arturo Munoz	Safety Director
Pam Isaaks	Scale Operator/Office Assistant
Michael Stripe	Vice President Safety
Justin Allen	Associate General Counsel
Scott Ewing	Associate General Counsel

CKJ Trucking LP

Clint DeLange	Independent Contractor Manager
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Premier Truck Group

Rick Allen	Service Technician
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Mine Safety and Health Administration

Homer Allen Pricer Jr.	Supervisory Mine Safety and Health Inspector
Lance Miller	Mine Safety and Health Inspector
Ray Hurtado	Mine Safety and Health Inspector

Appendix B

Accident Investigation Data - Victim Information										U.S. Department of Labor									
Event Number: 6 7 3 5 3 7 2										Mine Safety and Health Administration									
Victim Information: 1																			
1. Name of Injured/ill Employee: Julio C. Flores		2. Sex: M	3. Victim's Age: 52	4. Degree of Injury: 01 Fatal															
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: 03/14/2017 b. Time: 6:00					6. Date and Time Started: a. Date: 03/14/2017 b. Time: 5:30														
7. Regular Job Title: 176 Over the road independent truck driver				8. Work Activity when Injured: 090 unloading OTR dump trailer				9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>											
10. Experience a. This		Years	Weeks	Days	b. Regular		Years	Weeks	Days	c. This		Years	Weeks	Days	d. Total		Years	Weeks	Days
Work Activity:		13	10	2	Job Title:		13	10	2	Mine:		13	10	2	Mining:		13	10	2
11. What Directly Inflicted Injury or Illness? 093 27.5 tons of sand buried victim											12. Nature of Injury or Illness: 110 asphyxia/burrowing injuries								
13. Training Deficiencies: Hazard: _____ New/Newly-Employed Experienced Miner: _____ Annual: _____ Task: _____																			
14. Company of Employment: (if different from production operator) Capricorn Trucking (Independent Truckers)											Independent Contractor ID: (if applicable)								
15. On-site Emergency Medical Treatment: Not Applicable: _____ First-Aid: _____ CPR: _____ EMT: _____ Medical Professional: _____ None: <input checked="" type="checkbox"/>																			
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim: 9999						None (No Union Affiliation)							
Victim Information:																			
1. Name of Injured/ill Employee:		2. Sex:	3. Victim's Age:	4. Degree of Injury:															
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:					6. Date and Time Started:														
7. Regular Job Title:				8. Work Activity when Injured:				9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input type="checkbox"/>											
10. Experience a. This		Years	Weeks	Days	b. Regular		Years	Weeks	Days	c. This		Years	Weeks	Days	d. Total		Years	Weeks	Days
Work Activity:					Job Title:					Mine:					Mining:				
11. What Directly Inflicted Injury or Illness?											12. Nature of Injury or Illness:								
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: _____ First-Aid: _____ CPR: _____ EMT: _____ Medical Professional: _____ None: _____																			
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim:													
Victim Information:																			
1. Name of Injured/ill Employee:		2. Sex:	3. Victim's Age:	4. Degree of Injury:															
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:					6. Date and Time Started:														
7. Regular Job Title:				8. Work Activity when Injured:				9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input type="checkbox"/>											
10. Experience a. This		Years	Weeks	Days	b. Regular		Years	Weeks	Days	c. This		Years	Weeks	Days	d. Total		Years	Weeks	Days
Work Activity:					Job Title:					Mine:					Mining:				
11. What Directly Inflicted Injury or Illness?											12. Nature of Injury or Illness:								
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: _____ First-Aid: _____ CPR: _____ EMT: _____ Medical Professional: _____ None: _____																			
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim:													