FAI-4313135-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION
Surface Mine
(Sand)

Fatal Powered Haulage
September 16, 2020

Woodland Plant
Clayton Sand Company
Chatsworth, Burlington County, New Jersey
Mine ID No. 28-00715

Accident Investigators

Peter Betz
Mine Safety and Health Inspector

Stephen Kowalick
Mine Safety and Health Inspector

Originating Office

Mine Safety and Health Administration
East Region / Mt. Pleasant District
631 Excel Drive, Suite 100
Mt. Pleasant, Pennsylvania 15666
Michael Kelley, District Manager

Table of Contents

OVERVIEW

On September 16, 2020, at approximately 10:25 a.m., Mehmet Bayram, a 47-year-old truck driver, with 20 years of over-the-road experience and three years at this mine, died after the truck he was operating struck him. Bayram crawled under his truck to repair the brakes while the engine was running. The parking brake was not set, the transmission was in drive, and the truck was not blocked against motion.

GENERAL INFORMATION

Clayton Sand Company owns and operates the Woodland Plant. The mine is located in Chatsworth, Burlington County, New Jersey. The plant operates one eight-hour-shift, five days a week, and employs 14 miners.

The mine uses a suction dredge to extract sand and gravel from the bottom of a lake. A pipeline transports the sand and gravel to a wet screening plant for separation into two stockpiles. Front-end loaders load the finished product into over-the-road trucks.

The principal officers for Clayton Sand Company at the time of the accident were:

William Richard Clayton	Partner
Daniel O. Clayton	Partner
William R. Clayton	Partner
Douglas R. Clayton	Partner

The Mine Safety and Health Administration (MSHA) completed a regular inspection of this mine on September 4, 2020. The 2019 non-fatal days lost (NFDL) incident rate for Woodland Plant was 5.08, compared to the national average of 1.03 for mines of this type.

DESCRIPTION OF ACCIDENT

On September 16, 2020, at approximately 10:25 a.m., Bayram drove a Kenworth T880 Tri-axle dump truck onto the mine haul road as the lead truck in a group of three trucks. Bayram told the other two truck drivers, by citizens-band radio, that he was having a problem with his brakes. The second truck drove around Bayram toward the mine's truck scales. Bayram pulled his truck to the side of the haul road, approximately 250 feet inside the gate.

Mehmet Koc, Truck Driver, entered the mine property through the gate and parked behind Bayram. Koc observed Bayram exit the cab of his truck and crawl underneath his truck to adjust the brakes, without blocking it against motion. Bayram then returned to the cab of his truck and drove it forward approximately three feet. Koc stated that Bayram then stopped his truck a second time, and got out. Bayram again crawled underneath his truck to make further adjustments to the brakes, without blocking it against motion. Koc noticed the victim's truck beginning to move with Bayram underneath. Koc left his truck and went to the cab of Bayram's truck, noting that the engine was running, the transmission was in drive, and the parking brake was not set. Koc quickly applied the parking brake. Koc then went to check on Bayram. Koc tried, but was unable to remove Bayram from under the driver's side rear truck tires. Koc then got into the cab of Bayram's truck and backed the truck off of Bayram.

An unidentified truck driver notified Joe Kienzlen, Scale Operator, that a truck driver had been run over. Kienzlen informed Vince Arnwine, Lead Man, by radio. Arnwine called 911 by radio and traveled toward the accident scene. At approximately 10:40 a.m., Arnwine arrived at the accident scene, examined the victim, and determined Bayram was not breathing and had no pulse. Due to Bayram's injuries, Arnwine was unable to perform cardiopulmonary resuscitation. Arnwine notified Dave Gravatt, Site Supervisor, and Lois Kapp, Safety Director, of the accident.

Ed Carey and Keith Morse, Woodland Township EMS Technicians, arrived at the scene at approximately 10:50 a.m. Carey and Morse determined that Bayram was deceased.

INVESTIGATION OF ACCIDENT

On September 16, 2020, at 11:02 a.m., Kapp, called the Department of Labor National Contact Center (DOLNCC) to report the fatal accident. The DOLNCC notified Kevin Abel, Assistant District Manager. At approximately 11:40 a.m., Abel contacted Kyle Stofko, Mine Safety and Health Inspector, and dispatched Stofko to the accident scene. Peter Betz, Mine Safety and Health Inspector, and Stephen Kowalick, Mine Safety and Health Inspector, were also directed to travel to the accident scene. Stofko arrived on the accident scene at approximately 2:00 p.m., and issued a 103(k) order to ensure the safety of all persons at the mine.

On September 17, 2020, MSHA's accident investigation team arrived at the mine and conducted a physical examination of the accident scene. Robert Brazer, P.E. and James Kelly, P.E., Civil Engineers from MSHA Technical Support's Pittsburgh Safety and Health Technology Center, and Mark Kvitkovich, Mechanical Engineer, from MSHA Technical Support's Approval and Certification Center, assisted in the examination of the truck.

The investigators conducted interviews with mine employees and truck drivers. The investigators reviewed documents and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and truck drivers. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred on the mine haul road, approximately 250 feet inside Woodland Plant's main entrance (see Appendix B). The victim stopped his truck at the side of the level haul road, consisting of stable sand.

Weather

The weather at the time of the accident was clear with calm winds and a temperature of 74 degrees Fahrenheit. Investigators determined that weather was likely not a factor in the accident.

Truck Information

The 2016 Kenworth T880 Tri-axle Dump Truck is equipped with an automatic transmission, tandem rear drive axles, a single front non-drive steer axle, and a rear pusher lift axle, with S-cam air brakes on all wheel ends except the lift axle. The gross vehicle weight of the truck is 80,000 lbs. and it was unloaded at the time of the accident.

Brake System

During interviews, investigators learned that immediately after the accident, the truck was in drive with the parking brake released and no wheel chocks present. Investigators also learned that a strong "brake" smell was coming from the victim's location.

Upon visual inspections during brake application, investigators noticed the driver's side front drive axle brake chamber did not have the appropriate stroke of between ½-inch and 2.5 inches necessary for functional braking application. Brake stroke is an indicator of brake adjustment and is a direct correlation of the space between the brake shoes and drums. The stroke of this chamber measured approximately ¼-inch. With this minimal brake movement, the brake shoes would not release their contact from the drums or would "drag." The low air pressure indicator light in the operator's compartment did not indicate any issues in the air system during these inspections.

Investigators inspected the chamber in question and found one of its airlines to be coiled/collapsed with a localized abraded area (see Appendix C). Investigators determined that the fittings were improperly installed, which caused the brake line to coil and collapse when the fittings were tightened. When installed properly, the brake line will not coil and collapse.

Investigators tested the truck with the twisted brake-line in place, and determined that the parking brake was not releasing properly. The victim was having difficulty driving the truck because the parking brake was not fully disengaged while he was driving the truck.

The parking brake is spring-applied and air-released. The spring is the component that forces the brake shoes against the inside of the brake drum. Actuating the park brake releases all air pressure allowing the springs to force the brake shoes against the inside of the brake drums, which prevents the wheel-ends from turning. The twisted brake-line reduced the air pressure in the line below the pressure needed to release parking brake in that chamber.

Investigators tested the brake system again after installing a new brake line and with the fittings properly installed. With the line replaced and the slack adjuster returned to within the recommended maximum stroke limit, the brakes released/applied as designed when actuated.

Training and Experience

Mehmet Bayram had 20 years of experience driving an over-the-road truck. For the past three years, Bayram had picked up material at the Woodland Plant and transported it to customers. The mine operator was found to be in compliance with training under Part 46. The training included traffic controls at the mine site and personal safety. Signage at the mine instructs truck drivers to remain in their truck at all times.

ROOT CAUSE ANALYSIS

The accident investigation team conducted an analysis to identify the underlying causes of the accident. The team identified the following root causes, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The truck engine was running, the parking brake was not set, the transmission was in drive, and the wheels were not blocked before work was performed under the truck.

   Corrective Action: The mine operator moved the sign that instructs truck drivers to remain in their trucks at all times to a location closer to the entrance to the mine property. The mine operator also installed two additional signs that say the same thing. These signs inform drivers to contact mine management and remain in their vehicles in the event of a breakdown or other issue.

CONCLUSION

On September 16, 2020, at approximately 10:25 a.m., Mehmet Bayram, a 47-year-old truck driver, with 20 years of over-the-road experience and three years at this mine, died after the truck he was operating struck him. Bayram crawled under his truck to repair the brakes while the engine was running. The parking brake was not set, the transmission was in drive, and the truck was not blocked against motion.

Approved: _____ Date: _____

Michael Kelley
District Manager

ENFORCEMENT ACTION

1. A 103(k) Order, number 4724302, was issued to Clayton Sand Company at 2:05 p.m. on September 16, 2020:

   The Kenworth triaxle VIN # INKZX4TX5G137912 drove over the operator of stated truck. The truck was found approximately 200’ inside the mine gate and on the right shoulder of the road on the mine road, no persons are to tamper with the truck, the tools behind the truck and are to remain outside the established barricade surrounding the truck until the order is lifted.

APPENDIX A
Persons Participating in the Investigation

Clayton Sand Company

Vince Arnwine	Lead Man
Dave Gravatt	Site Supervisor
Joe Kienzlen	Scale Operator
Bob Penrose	Risk Loss Manager

BYM Trucking

Talip Cagan	Truck Driver
Mehmet Koc	Truck Driver

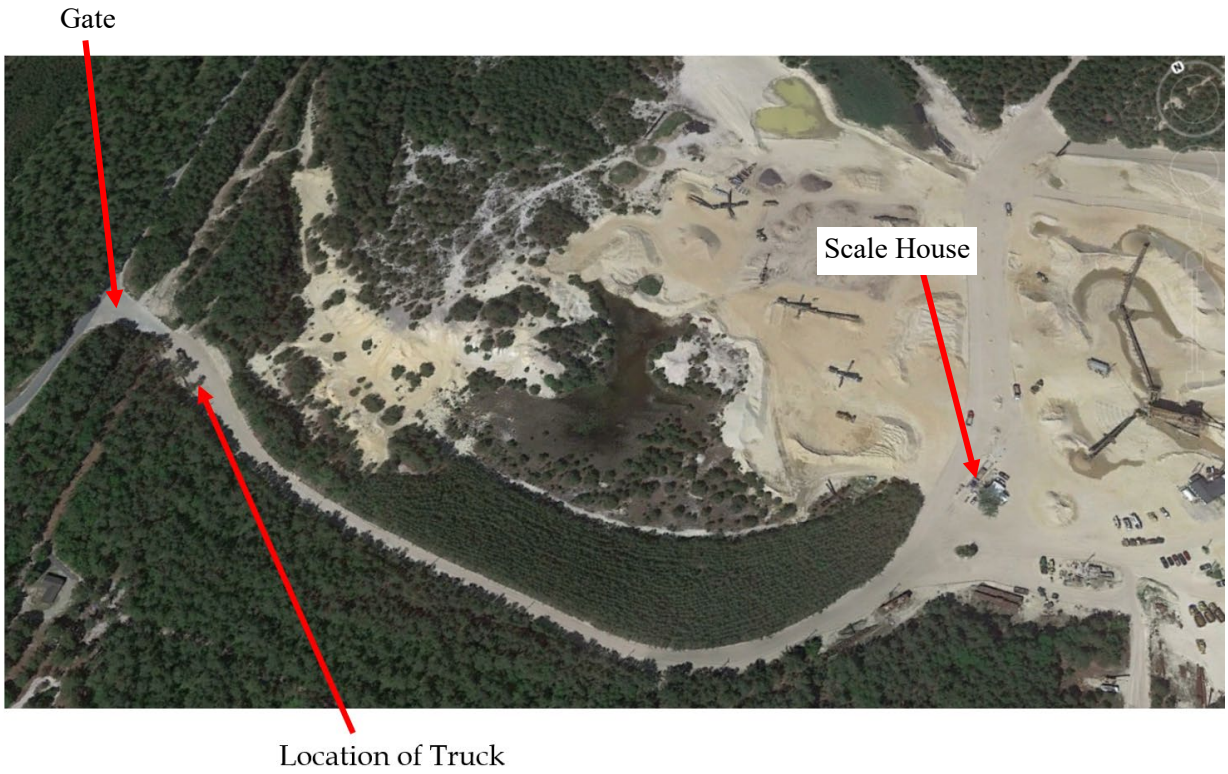
2016 Kenworth T880 Tri-Axle Dump Truck

Mustafa Kaya	Owner

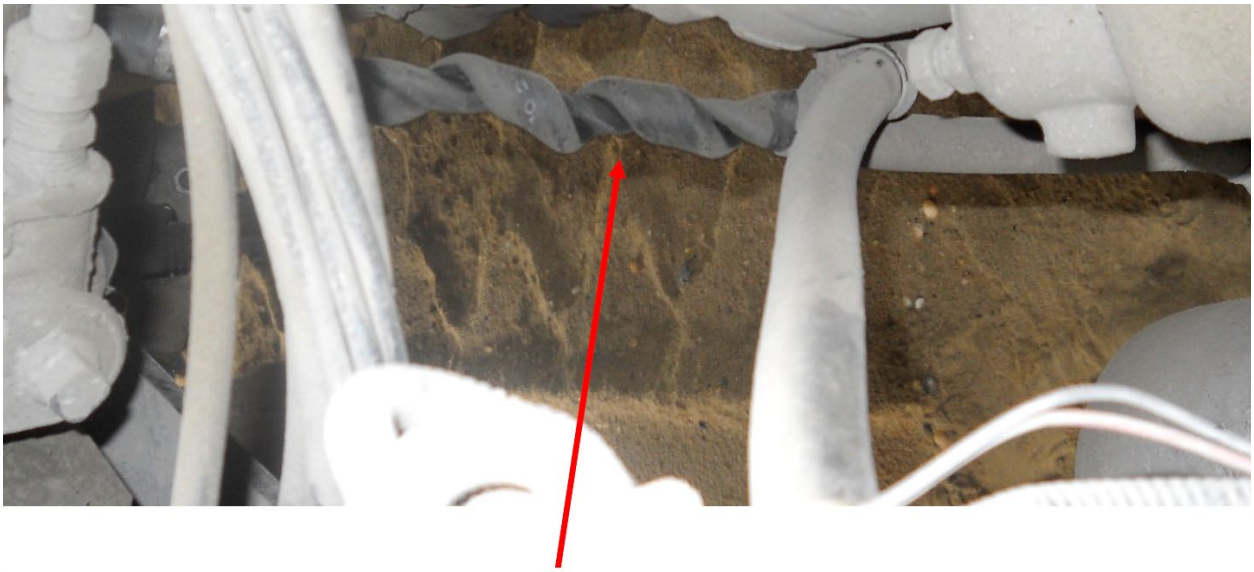
Mine Safety and Health Administration

Peter Betz	Mine Safety and Health Inspector
Robert Brazer, P.E.	Civil Engineer
James Kelly, P.E.	Civil Engineer
Stephen Kowalick	Mine Safety and Health Inspector
Mark Kvitkovich	Mechanical Engineer
Kyle Stofko	Mine Safety and Health Inspector

APPENDIX B
Accident Location



APPENDIX C
Coiled/Collapsed Brake Line



Brake Line