Dump Truck Driver Crushed Between Trackhoe and Dump Truck

Incident Number: 04KY101

Picture of dump truck and trackhoe involved in fatal incident.

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Kentucky Fatality Assessment and Control Evaluation (FACE) Program
Incident Number: 04KY101
Incident Date: November 11, 2004
Release Date: November 1, 2005
Subject: Dump Truck Driver Crushed Between Trackhoe and Dump Truck

Summary

On November 11, 2004, a 33-year-old male dump truck driver died when he was crushed between the driver's side of the dump truck and the swinging counter-weight of an excavator (trackhoe). His dump truck became stuck in mud after the trackhoe loaded dirt into it so he walked to the on-site office and informed the owner. The owner located a bulldozer on site and drove it to the dump truck while the driver retrieved a chain from his personal pickup truck. The owner raised the blade so the driver could attach the chain to it. Raising the blade of the bulldozer blocked the owner's view of the ground and the cab of the dump truck, but he could still see the operator in the cab of the trackhoe operating beside the dump truck. After attaching the chain to the bulldozer blade, the dump truck driver either proceeded to attach the chain to the dump truck and tried to enter the cab; or, had already done so when the chain slipped and he was exiting the cab to reattach the chain. The counter-weight of the trackhoe swung toward the dump truck pinning the dump truck driver between the dump truck and the counterweight. At the same time, the owner thought the chain was properly attached and began backing the bulldozer away from the dump truck but did not feel the tug of the chain. Upon hearing the bulldozer engine accelerate, the trackhoe operator looked in the rear-view mirror and saw the dump truck driver on the ground. Stopping the bulldozer, the owner looked toward the trackhoe operator to check if the chain had slipped. The trackhoe operator was signaling to him that something was wrong. Both men exited their equipment to find the dump truck driver unconscious on the ground. A nearby employee went to the office and told office staff to call emergency services. Emergency services arrived, observed no vital signs in the dump truck driver, and summoned the local coroner to the scene. The local coroner arrived and declared the dump truck driver dead at the scene.

To prevent future occurrences of similar incidents, the following recommendations have been made:

Recommendation No. 1: New employees should be given applicable safety training before any job tasks are performed.

Recommendation No. 2: Barriers should be used when heavy equipment is operated in close proximity to each other.

Recommendation No. 3: When operating/driving heavy equipment in close proximity, operators and drivers should use radio communication to inform other workers of hazards and altered job tasks.

Background

Established in 1978, the decedent's company was privately owned and employed approximately 50 people. The company provided rough and finished surface lumber to the building industry. On-the-job training was provided for inexperienced employees. Safety was addressed in weekly tool-box talks. The day of the incident was the decedent's first day on the job. He had been hired that morning by the owner because the dump truck driver said he was experienced.

The dump truck driven by the decedent was an older model and was purchased used several years prior to the incident. Information on the dump truck such as year, weight, and accurate mileage was not available.

According to a local weather service, precipitation on November 11, 2004 was 0.14 inches with temperatures of 63° F to 42°F. No precipitation was recorded for six days prior to the incident.

Investigation

On November 11, 2004, via a television newscast, the Kentucky Fatality Assessment and Control Evaluation Program became aware of an occupational fatality involving a trackhoe and a dump truck. The coroner was contacted and a site visit was planned. Two site visits were made and photographs were taken. One employee was interviewed later by telephone.

A year prior to the incident, the lumber company where the decedent was employed removed silt from a run-off pond and dried it on the southeast side of the mill property. On November 11, 2004, three employees were instructed to move the silt from beside the pond to a fill site on company property located approximately 750 feet - 1000 feet away.

The decedent was hired at 6:00 AM. Work began at approximately 7:00 am when the three employees, one operating a trackhoe, one operating an industrial tractor with a pan attachment (pan), and one driving a dump truck (the decedent), began moving the silt. With the trackhoe parked between the dump truck and pan, the trackhoe operator would load the dump truck, then the pan. As the pan was being loaded, the dump truck would haul its load to the fill site and dump it. When the dump truck returned to the mound of silt, the driver would back the truck toward the mound of silt and wait to be loaded by the trackhoe.

At approximately 10:30 am, the dump truck had been loaded and the driver attempted to pull away from the area and became mired in mud. The trackhoe operator tried to use the trackhoe to free the dump truck. That attempt failed so the driver climbed out of the dump truck, walked to the office, located the owner and explained the situation. As the driver walked back to the dump truck, he retrieved a chain from his personal pickup truck. The owner located a bulldozer on site, drove it and parked it facing the front of the dump truck. He then raised the bucket of the bulldozer so the dump truck driver could wrap one end of the chain around the blade. Raising the blade blocked the owner's view of the dump truck and the ground, but he could see the trackhoe operator in the cab of the trackhoe working alongside. The trackhoe operator was loading the pan, facing away from the dump truck and was unaware the dump truck driver had returned to the area. The dump truck driver took the chain and wrapped one end around the

bulldozer blade. Then, one of two things probably occurred: 1) he attached the chain to the dump truck and it slipped off, so he exited the truck cab to re-attach the chain; or, 2) he was beside the dump truck looking for a place to attach the chain to the dump truck. That is when the trackhoe, loading the pan, swung around and the counter-weight of the trackhoe pinned the dump truck driver between the trackhoe and the dump truck door. The owner (not being able to see the ground or the cab of the dump truck), thought the chain was attached and began to back the bulldozer away from the dump truck. After backing the bulldozer a few feet, the owner expected the chain to tug but it did not. The owner tried to get the trackhoe operator's attention (he wanted the trackhoe operator to look and see if the chain had slipped off either the dump truck or the front-end loader bucket). The trackhoe operator had heard the bulldozer engine begin to accelerate, looked at the front-end loader and dump truck through the mirrors, and saw the dump truck driver on the ground. The trackhoe operator then looked at the owner and motioned that something was wrong and for him to get off the bulldozer. Both men exited their equipment and went to the driver's side of the dump truck where they found the truck driver on the ground. Another employee in the area went to the office building several hundred feet away and informed the office workers to call emergency services. Emergency services received the call at 10:55 AM. They responded at 10:57 AM and arrived at the scene at 11:07 AM to find the trackhoe operator holding the dump truck driver in his arms. Upon examination, emergency services found no vital signs and contacted the local coroner. The coroner arrived and at 11:30 AM, declared the truck driver dead at the scene.

Measurements were taken at the scene by Kentucky Occupational Safety and Health, and the local police. The distance between the counter-weight and the dump truck's door measured six inches.

Cause of Death

The cause of death was listed as due to massive trauma to the chest.

Recommendations and Discussions

Recommendation No. 1: New employees should be given applicable safety training before any job tasks are performed.

Because of the decedent's said experience in driving dump trucks and operating heavy equipment, he was allowed to begin operating the dump truck immediately upon being hired. A new employee orientation, including best safety practices, should have been provided to the decedent before he was allowed to begin driving the dump truck. Given the driver's newness to the job, a competent person should have performed a hazard assessment of the area before any work was performed and when the job task was altered (removing the truck from the mud). An explanation of the importance of keeping the dump truck out-of-range from the trackhoe's radius or any nearby heavy equipment should have been included in the training (29 CFR 1926.21(b)(2)).

Recommendation No. 2: Barriers should be used for operators of heavy equipment when operating in close proximity to each other.

29 CFR 1926.550(a)(9) requires the swing radius of the trackhoe to have been barricaded. When operating heavy equipment in close proximity to each other, cones, caution tape, physical barricades, or another method should be used to indicate safety zones for workers. A safe distance outside the trackhoe's radius should have been marked off so the dump truck driver would know where the dump truck was in relation to the trackhoe. This barrier would have reminded the dump truck driver not to be inside the swing radius of the trackhoe.

Recommendation No. 3: When operating/driving heavy equipment in close proximity, operators and drivers should use radio communication to inform other workers of hazards and altered job tasks.

Each employee should have had a radio communication device that would have allowed them to verbally communicate with each other instead of relying on hand signals. This would have allowed the trackhoe operator to inform the dump truck driver he was backing in too close to the trackhoe. The dump truck driver could have informed the trackhoe operator he had returned to the work site. A radio would allow workers to communicate when they do not have visual contact with each other. This would enable workers to know if someone was in a blind spot of, or too close to heavy equipment. Workers on foot should never approach operating machinery without first gaining the machine operator's attention.

Keywords

Bulldozer
Dump truck
Operator
Trackhoe

References

KRS 338.031(1)(a)
29 CFR 1926.21(b)(2)
29 CFR 1926.550(1)(9)

Acknowledgements

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Local Coroner
Local Police

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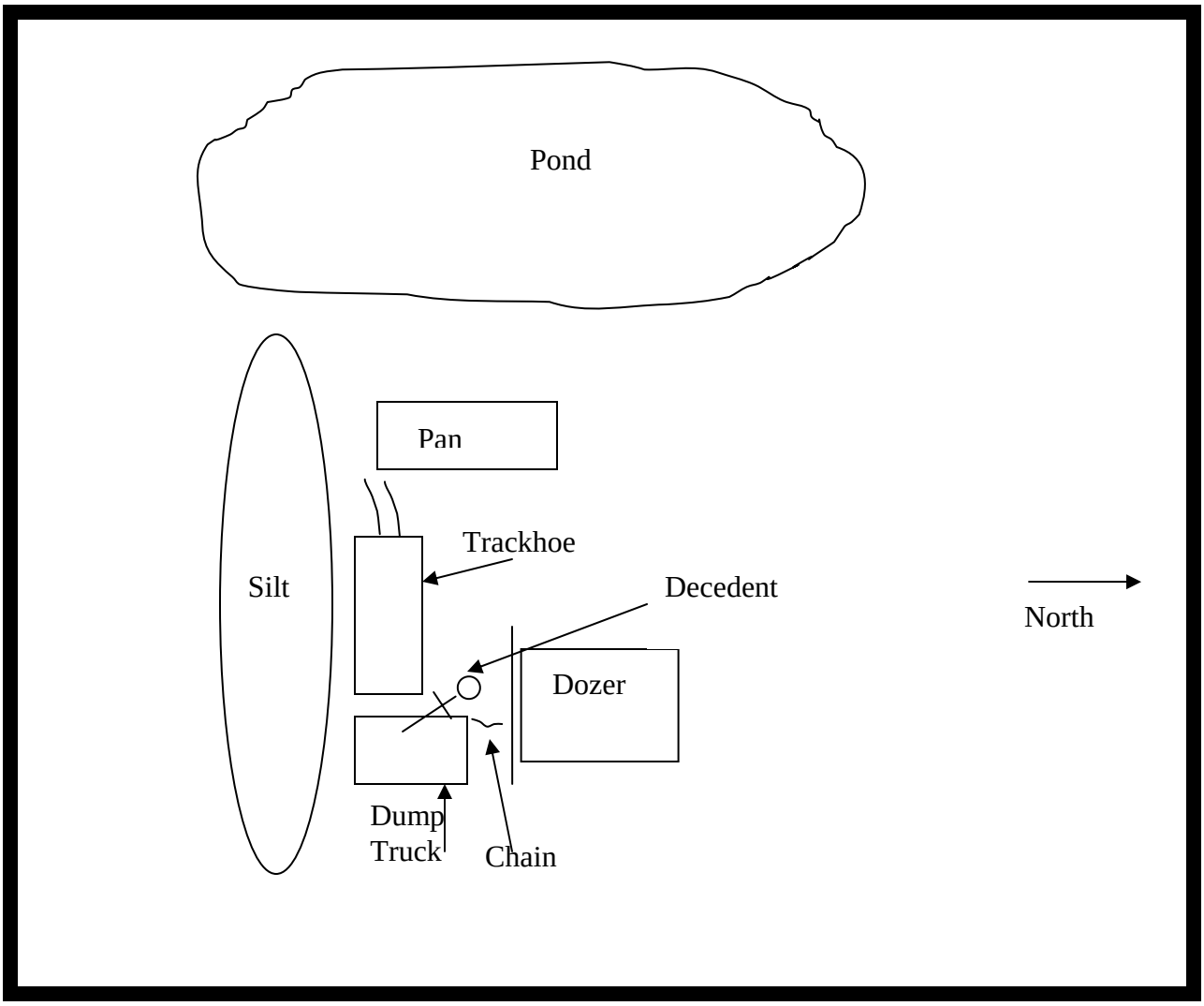
Side of dump truck where decedent was pinned by trackhoe.



Schematic of scene. Not to scale.