MAI-2015-04

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

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Phosphate Rock)

Fatal Machinery Accident
January 26, 2015

PCS Phosphate – White Springs
Swift Creek Mine
Jasper, Hamilton County, Florida
Mine ID No. 08-00798

Investigators

Felix W. DeLoach
Supervisory Mine Safety and Health Inspector

Larry D. Melton
Mine Safety and Health Inspector

Jonathan Hall
Mechanical Engineer

Norberto Ortiz
Mine Safety and Health Specialist (Training)

Originating Office
Mine Safety and Health Administration
Southeastern District
1030 London Drive, Suite 400
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Samuel K. Pierce, Southeast District Manager

OVERVIEW

William K. Stormant, Heavy Equipment Operator, age 57, was seriously injured on January 26, 2015. Stormant was operating an excavator near a water-filled ditch when the excavator tipped on its side and entered the murky water, trapping him inside the nearly submerged cab. Rescuers removed Stormant from the water-filled cab. Stormant was transported to a hospital where he died later that day.

Three days prior to the accident several inches of rain fell in the area, causing the ditch to fill with water and overflow. This water covered the ditch making it invisible to persons working in the area. Stormant was operating the excavator near this ditch when the accident occurred.

The accident occurred due to management's failure to ensure that procedures were established to ensure miners could safely prepare a work area in advance of a dragline. Management failed to ensure competent persons were properly conducting workplace examinations. The water-filled ditch was not identified as a hazard after the heavy rainfall and management failed to barricade or place warning signs to warn employees of hazards, such as the water-filled ditch, that were not immediately obvious to miners.

GENERAL INFORMATION

Swift Creek Mine, a surface phosphate mine owned and operated by PCS Phosphate-White Springs, is located in Jasper, Hamilton County, Florida. The principal operating official is Paul Dekok, President. The mine currently operates two, 12 hour shifts, five days per week, and weekends as needed. Total employment is 188 persons.

Large draglines strip varying depths of overburden above phosphate ore reserves beneath the surface. A dragline support crew prepares the work area in advance of the dragline using two dozers and one excavator. Draglines excavate the phosphate ore which is then pumped as suspended slurry to a mill where it is segregated and processed for use in the manufacture of liquid and granular fertilizer products. Reject material is pumped from the mill through slurry pipes and used in reclamation projects.

The Mine Safety and Health Administration (MSHA) completed its last regular inspection at this operation on December 11, 2014.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, January 26, 2015, William Stormant (victim) reported to work at approximately 7:00 a.m., his normal starting time. Before work began Stormant discussed how they were going to reduce the flooding in the immediate area with a coworker, Donnie Cray, Heavy Equipment Operator. They discussed excavating drainage ditches and removing debris to allow water to drain to reduce the impact of the flooding.

Stormant started working at the cut 67 for the #4 dragline, #4 mine area. The Old Hooker Bay Perimeter Ditch located in this area was approximately 6 to 7 feet deep and 12 to 15 feet wide and had been filled and covered by murky water from the recent heavy rains. In addition to Stormant and D. Cray, Kenneth Burnett, Heavy Equipment Operator, worked in the same area, also providing support for the #4 dragline. A float crew was working in the area as well, bolting pipe together. D. Cray and Burnett were operating Caterpillar D8 dozers while Stormant was operating a Caterpillar 345C excavator. Shortly before 10:00 a.m., D. Cray called Stormant on the company radio but Stormant did not answer. At 10:01 a.m., D. Cray called Stormant on his personal cell phone to ask Stormant to come to the barge ditch to pull some muck out. Stormant replied that he would be there shortly.

Cedric Cray, Heavy Equipment Operator, was on the float crew working approximately 200 yards from the accident site. He was operating a Caterpillar 950 C wheeled payloader, with a rake attachment, holding pipes in place to be bolted together. C. Cray looked to his left and saw Stormant's excavator tipping. C. Cray called Burnett on the company radio and told him to look towards the excavator. C. Cray then blew the payloader's horn to get the attention of the float crew to set the pipe down.

C. Cray then drove toward the excavator. Burnett also drove his dozer toward the excavator. Burnett and C. Cray tried to connect the dozer's wench cable to the rear of the excavator. After several failed attempts to connect the cable, Burnett climbed onto the rear of the excavator and over the machine to reach the cab. D. Cray also saw the excavator tipping and drove his dozer to the accident scene. He waded into the water on the south side of the excavator and reached Stormant. Stormant had removed the rear window to exit the cab but was unable to get out on his own. He was breathing but unconscious. Burnett helped D. Cray pull Stormant from the cab and to the shore.

Keith Dempsey and Kerry J. O'Steen, Area Foremen, learned of the accident on the company radio and drove to the site in a company pickup truck. They transported Stormant in the pickup truck about five miles to the company clinic.

At 10:34 a.m., Peter Tuohey, Jr., Lab Technician, called for Emergency Medical Services. Michael Broshar, EMT, and Larry Robinson, Company Nurse, performed cardiopulmonary resuscitation (CPR) on Stormant at the clinic until an ambulance arrived at 10:50 a.m. The ambulance transported Stormant to a helipad. He was then air lifted to UF Health Shands Hospital in Gainesville, Florida, where he was pronounced dead at 5:45 p.m. The cause of death was attributed to drowning from water submersion.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 10:41 a.m. on January 26, 2015, by a telephone call from Peter Tuohey, Jr., Lab Technician, to the National Call Center. The National Call Center notified Michael Evans, Safety Specialist, and an investigation was started the same day.

An order was issued under Section 103(j) of the Mine Act to ensure the safety of the miners. This order was subsequently modified to Section 103(k) of the Mine Act when the first Authorized Representative arrived at the mine.

MSHA's accident investigation team traveled to the mine, conducted 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 and contract management and employees, and miners' representatives.

DISCUSSION

Weather

The weather conditions at the time of the accident were overcast with a temperature of 54 degrees Fahrenheit and light winds of 2 miles per hour. The weather at the time of the accident was not considered to be a factor in the accident.

However, the area received several inches of rainfall three days prior to the accident. The heavy rainfall caused the Old Hooker Bay Perimeter ditch to fill with water and overflow. This water covered the ditch making it invisible to persons working in the area.

Location

The accident occurred at the #4 mining area, cut 67, in the Old Hooker Bay Perimeter ditch located approximately 1,071 feet southeast of the #4 dragline.

At the time of the accident, the excavator was moving forward through a large area of standing water. The cab of the excavator was turned approximately perpendicular to the tracks and the boom, stick, and bucket were up in the air, near full extension.

In the area of standing water, an old drainage ditch (the Old Hooker Bay Perimeter ditch) had been filled in and then recently partially re-excavated, leaving a closed end trench that had no drainage outlet for rainfall. The ditch measured approximately 15 feet wide and 6 to 7 feet deep. As the excavator moved forward, it tipped into this ditch with the cab pressing

against the far wall of the ditch. Illustration 1 shows the flooded area at the time of the accident, with the ditch not visible. Illustration 2 shows the area after water had been pumped out.

Illustration 1: Flooded area and partially submerged excavator

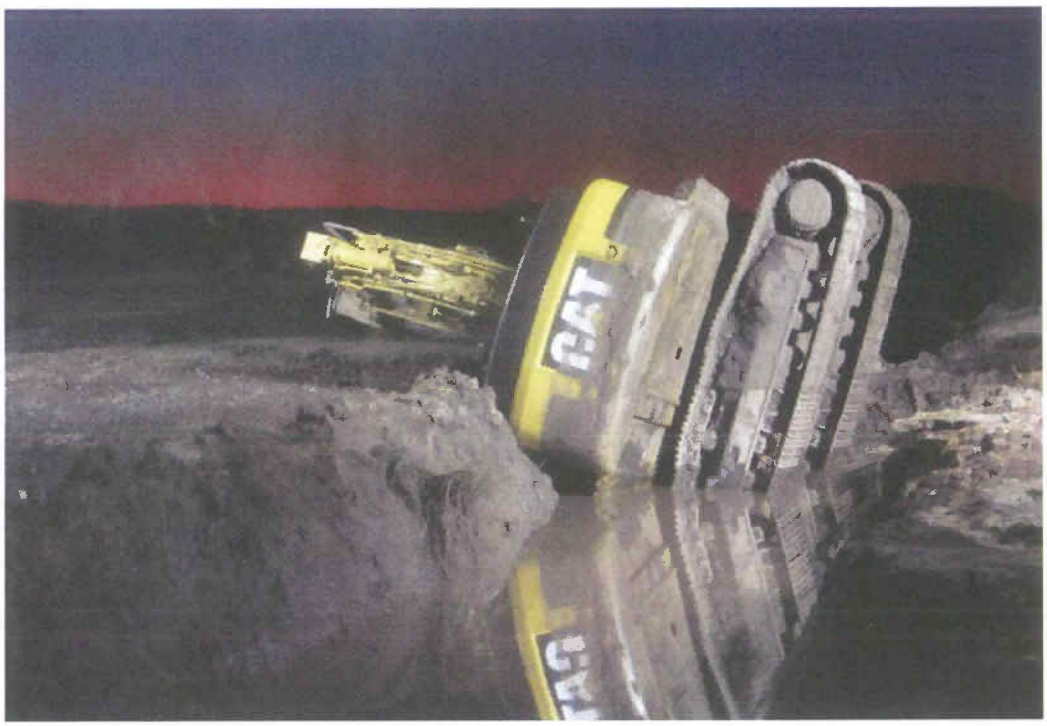

Illustration 2: Excavator and ditch with most of the water removed

Excavator

The excavator involved in the accident is a Caterpillar model 345C L, manufactured in August 2006. It is a self-propelled, hydraulically driven, crawler mounted machine used to dig and move dirt, gravel, and clay.

The investigators examined the excavator after it was recovered from the ditch. The rear window had been removed during recovery of the victim. This window was designated by Caterpillar as the alternate escape route. The primary exit was the door.

The hydraulic lockout control was in the upward position, enabling hydraulic operation. All of the controls appeared intact, were in the neutral position, and moved easily and smoothly. None of the controls were blocked by debris or foreign objects.

The excavator was equipped with Original Equipment Manufacturer (OEM) rock guards on the front and top windows. The front window was loose inside the rock guard. The cab of the excavator was turned nearly

perpendicular to the tracks, providing substantial visibility through the window in the door of the operator's compartment, allowing the operator to see the ends of the tracks as he moved forward.

The excavator was operated for the investigators to evaluate its range of motion. No defects were observed. The controls moved smoothly and easily through a full range of motion of the bucket, boom, and stick. The car body (rotating superstructure) rotated easily left and right, the tracks moved easily and smoothly left and right, forward and back.

The backup alarm worked. The brakes stopped the machine quickly and smoothly. The hydraulic lockout control in the operators compartment prevented movement when down and enabled movement when up; if the control was moved down in the middle of movement, the movement stopped immediately with no shaking or roughness. Due to water damage, the electronic controls and gauges in the operator's compartment were non-operational and the engine management system could not be used to recover recent error codes or any other data. No defects were observed during the operation of the excavator. The compartment door opened and closed normally but was positioned against the ground at the time of the accident.

TRAINING AND EXPERIENCE

William K Stormant had over 35 years of mining experience, all at this mine. A representative of MSHA's Educational Field and Small Mine Services conducted an in-depth review of the mine's training records. Stormant's training records were examined and found to be in compliance with all MSHA training requirements.

ROOT CAUSE ANALYSIS

The investigators conducted a root cause analysis and identified the following root causes:

Root Cause: Management failed to establish policies and procedures to ensure competent persons were properly conducting workplace examinations so miners could safely prepare a work area in advance of a dragline.

Stormant was operating an excavator near a water-filled ditch that was not identified as a hazard after the heavy rainfall three days prior to the accident.

Corrective Action: Management established policies and procedures to ensure that competent persons conduct workplace examinations before persons on the dragline support crew conduct any work. Training on the new policies and procedures was provided for all competent persons to conduct workplace examinations and to take corrective actions if needed.

Root Cause: Management failed to establish policies and procedures to ensure that barricades or warning signs were placed to warn employees of hazards, such as the water-filled ditch, that are not immediately obvious to miners.

Corrective Action: Management established policies and procedures to ensure that barricades or warning signs are placed to warn employees of hazards, such as the water-filled ditch, that are not immediately obvious to miners. All miners were trained regarding these policies and procedures.

CONCLUSION

The accident occurred due to management's failure to ensure that procedures were established to ensure miners could safely prepare a work area in advance of a dragline. Management failed to ensure competent persons were properly conducting workplace examination. The water-filled ditch was not identified as a hazard after the heavy rainfall three days prior to the accident. Additionally, management failed to barricade or place warning signs to warn employees of hazards such as the water-filled ditch that was not immediately obvious.

ENFORCEMENT ACTIONS

Issued to PCS Phosphate, Inc.

Order No. 8818251 -- issued on January 26, 2015, under the provisions of Section 103(j) of the Mine Act:

> *An accident occurred at the Swift Creek Mine on 01/26/2015 at approximately 10:26. This order is being issued, under section 103j of the Federal Mine safety and Health Act of 1977, to ensure the safety of all persons at this operation. This order is also being issued to prevent the destruction of any evidence which would assist in investigating the cause or causes of the accident. It prohibits all activity at the #4 mining unit in the vicinity of the accident, except to the extent necessary to rescue an individual or prevent or eliminate an imminent danger until MSHA has determined that it is safe to resume normal mining operations in the area. This order applies to all persons engaged in the rescue and recovery operation and any other persons on site. This order was initially issued orally to Lamar Raulerson (CMSP) at 11:00 on 01/26/2015 and now has been reduced to writing.*

The order was terminated on February 17, 2015, after conditions that contributed to the accident no longer existed.

Citation No. 8817149 -- issued under the provisions of Section 104(d)(1) of the Mine Act for a violation of 30 CFR 56.20011:

> *A fatal accident occurred at this operation on January 26, 2015, when a track mounted excavator overturned in the Old Hooker Bay perimeter ditch, trapping the equipment operator underwater. The excavator was traveling in murky water, which prevented the ditch from being visible. Management engaged in aggravated conduct constituting more than ordinary negligence by failing to barricade or place warning signs to warn employees of hazards not immediately obvious to the equipment operator. This violation is an unwarrantable failure to comply with a mandatory standard.*

Citation No. 8817150 -- issued under the provisions of Section 104a of the Mine Act for a violation of 30 CFR 56.18002(a):

> *A fatal accident occurred at this operation on January 26, 2015, when a track mounted excavator overturned into the Old Hooker Bay perimeter ditch trapping the equipment operator underwater. Adequate workplace exams were not being performed at the #4 mine. The water-filled ditch was not identified as a hazard after the heavy rainfall three days prior to the accident. Management failed to ensure persons were properly conducting workplace examinations.*

Approved: Samuel K. Pierce Date 6/11/15
Samuel K. Pierce
Southeast District Manager

APPENDIX A

Persons Participating in the Investigation

PCS Phosphate, Inc.

J. Lamar Raulerson	Safety Specialist
Joe H. Mayer	Safety Specialist
Phillip McIntyre	Union Representative

Law Office of Ogletree Deakins

William K. Doran	Attorney

Hamilton County Sherrif's Office

Sgt. Kenneth M. Blanton	Investigator

EMS

Hamilton County EMS

Mine Safety and Health Administration

Felix W. DeLoach	Supervisory Mine Safety and Health Inspector
Larry D. Melton	Mine Safety and Health Inspector
Jonathan Hall	Mechanical Engineer
Norberto Ortiz	Mine Safety and Health Specialist (Training)

APPENDIX B

Victim Information

Accident Investigation Data - Victim Information
Event Number: 6 6 7 5 5 3 6

U.S. Department of Labor
Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Degree of Injury:
William Stormant	M	57	01 Fatal

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 01/26/2015 b.Time: 17:45	a. Date: 01/26/2015 b.Time: 10:26

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
173 Heavy Equipment Operator	065 Operating Excavator	Yes X No

10. Experience	a. This Work Activity:	b. Regular Job Title:	c: This Mine:	d. Total Mining:
Years	0	0	35	35
Weeks	35	35	27	27
Days	0	0	1	1

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
126 drowning	110 drowning

13. Training Deficiencies:
Hazard: | New/Newly-Employed Experienced Miner: | Annual: | Task: |

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: | Medical Professional: X | None: |

16. Part 50 Document Control Number: (form 7000-1)

17. Union Affiliation of Victim: 2485 Int. Chemical Workers Union