

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

REPORT OF INVESTIGATION

Surface Nonmetal Mine  
(Common Sand)

Fatal Other Accident (Drowning)  
December 10, 2013

Hunter Sand & Gravel, LLC  
Dredge IV  
Paducah, McCracken County, Kentucky  
Mine ID No. 15-17687

Investigators

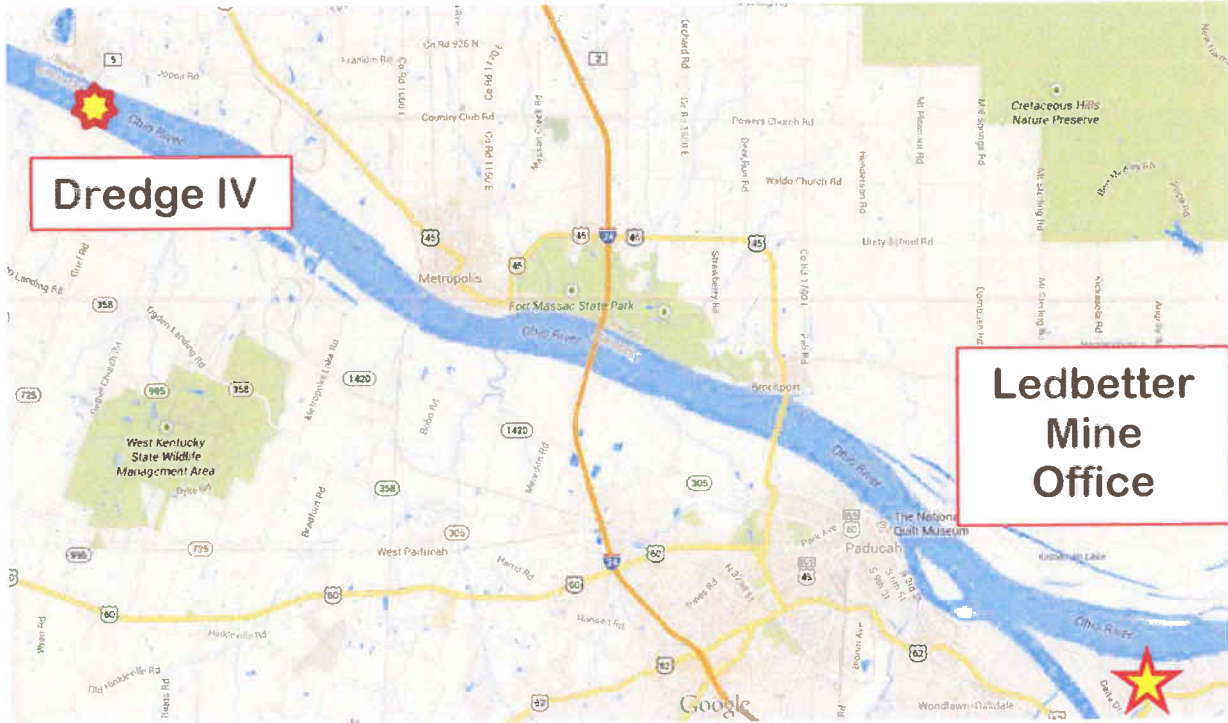
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Samuel Pierce, District Manager





Dredge IV is located outside Joppa, Illinois, approximately 21 miles downstream on the Ohio River from the mine office in Ledbetter, Kentucky (32 miles by road).





## OVERVIEW

On December 10, 2013, Dustin Burnham, Dredge Deck Hand, age 27, drowned when he fell into the Ohio River. Burnham walked onto barge MEM 611 to measure the amount of material in the barge (take a draft reading) when he lost his footing and fell into the river. A tugboat (Patsy M) was attached to the barge and Roger Fairfield, Tugboat Pilot, saw Burnham in the water. Fairfield disconnected the tugboat from the barge to rescue Burnham who was approximately 20 yards down river when he disappeared below the surface of the water.

Burnham had been taking a break in the break room on Dredge IV when Robert Douglas, Dredge Foreman, called on the radio for a draft reading. Douglas was in the control room loading the barge and needed a draft reading to determine if the barge was ready to be moved. Burnham left the break room and walked to the barge. Fairfield saw Burnham get on the barge, but did not watch him as he traveled to the other side of the barge to obtain the draft reading. Typically, miners had to manually check the readings several times each shift to ensure the barge was being loaded correctly.

The accident occurred due to management's failure to ensure that a competent person examine each working place at least one each shift for conditions which may adversely affect safety or health. Accumulations of snow and ice were not removed from the deck of the barge. The snow and ice on the barge covered the barge rigging which created an additional slipping and tripping hazard.

Management also failed to enforce a life jacket policy. Persons interviewed stated miners were known to forget or refrain from wearing their life jackets and had to be frequently reminded. Several spare life jackets were available in the break room. Burnham's life jacket was lying in a chair next to his cell phone. Additionally, management failed to provide a safety belt and line to ensure the victim could not fall into the river.

## **GENERAL INFORMATION**

Dredge IV, a vacuum dredge facility operated by Hunter Sand & Gravel, LLC, and owned by HMT Holdings, Inc., is located on the Ohio River near Joppa, Massac County, Illinois. At the time of the accident, the principal operating official for the dredge was Carl Blanchard (Hook), Operations Manager. The dredge operates 24 hours a day, five to six days a week. Total employment is 10 persons that work two 12 hour shifts.

Dredge IV is anchored to the bottom of the river. The dredge rotates a suction head with the aid of two spuds, allowing the vacuum hose to sweep the river bottom. The sand is pumped to the top of the dredge and a series of screens and belts separate the material. Screened sand is loaded into an attached barge. A tugboat is used to bring the empty barges to the dredge and remove the loaded barges. The tugboat takes the loaded barges to a mooring along the river bank near Joppa, Illinois.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on May 23, 2013.

## **DESCRIPTION OF THE ACCIDENT**

Dustin Burnham (victim) started his shift at 6:00 p.m. on December 9, 2013, the day prior to the accident. The crew of five miners initially checked the condition of the equipment including the fluid levels. The crew finished loading a barge that had been partially loaded by the previous crew. Burnham and Eddie Henson, also a Dredge Deck Hand, changed spuds around 12:15 a.m., December 10, 2013. About 1:30 a.m., they took a break in the dredge's break room. Persons interviewed stated it was a common practice to remove life jackets and coats while in the break room.

About 2:15 a.m., Henson left the break room to turn on a propane heater. Douglas called on the radio for a draft reading. Burnham responded to this call and left the break room to obtain the draft reading. Fairfield then noticed Burnham get onto the barge, but did not see him walk across the barge.

Fairfield looked away from Burnham to check the position of another vessel, the Diane B. Siegel. At approximately 2:45 a.m. Fairfield turned back and saw a light in the water moving down river with the current. He immediately called on the radio "Man Overboard!" Rodney Story, Tugboat Deck Hand, was in the

galley of the tugboat when he heard the call. Story released the facewires from the barge, freeing the tugboat from the barge. Fairfield then maneuvered the tugboat near the visible light in the water. Story grabbed a life ring and stood at the head of the tugboat. As the tugboat neared the light, Story saw Burnham's head lamp under water and saw him sink out of sight before a rescue could be made.

Carl Blanchard, Dredge Operations Manager, was at his home and heard the "Man Overboard!" distress call on his handheld radio. When the distress call was made, Blanchard immediately notified the United States Coast Guard. Blanchard then called Robert Stone, Manager Sales & Compliance.

The McCracken County Disaster and Emergency Services (DES) responded and was involved in the search daily until it was called off on December 19, 2013.

### **INVESTIGATION OF THE ACCIDENT**

Robert Stone called MSHA's National Call Center about 4:16 a.m. EST on December 10, 2013. The National Call Center notified Michael Evans, Safety Specialist, and an investigation started the same day. A verbal order was issued under the provisions of 103(j) of the Mine Act to ensure the safety of the miners. At 7:00 a.m., soon after the first Authorized Representative (AR) arrived at the mine, this order was modified to 103(k) of the Mine Act.

MSHA sent an inspector from the Franklin, Tennessee Field Office to secure the accident scene until the accident investigation team could arrive. By 11:00 a.m., two members of MSHA's accident investigation team from the Lexington, Kentucky Field Office arrived at the mine and made a physical inspection of the accident scene. A third member of the investigation team from Educational Field Services (EFS) arrived that evening. The accident investigation team interviewed employees, examined the accident scene, 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 barge MEM 611. It was attached to Dredge IV and was being loaded at the time of the accident. This dry bulk cargo barge was a nominal 200 foot in length and 35 foot wide. The walkways on the lengths were 39 inches wide. The raked (sloped) end had a 13 foot wide walkway and the stern end had a six foot wide walkway. The coamings (side walls) were four feet above the decking. This open barge had no outside railings.

### **Weather**

The weather on the morning of the accident was clear with a temperature about 23 degrees Fahrenheit. The river rose approximately four feet the previous day, making the current swift. The water temperature was about 40 degrees Fahrenheit. The wind speed averaged 7 mph that day, with gusts up to 18 mph. Weather was considered a contributing factor to the accident. The temperature for the Joppa area had been below freezing since 4:00 p.m. on December 5, 2013.

### **Rescue and Recovery**

The list of organizations and personnel that participated with rescue and recovery efforts include but is not limited to the following: Metropolis Fire Department, Metropolis EMS, McCracken DES, US Coast Guard, Massac County EMS, Massac County Sheriff's Department, Indiana Department of Natural Resources, and Joppa Fire Department along with many individual volunteers. Many volunteers, including family members, searched the downstream banks for weeks following the accident. The body of the victim has not been recovered as of the issuance of this report.

### **Factors Causing the Victim to Fall into the River**

- The snow and ice partially covered the rigging along the barge's walkway. The victim slipped and fell into the water. Management was aware the deck of the barge was covered with snow and ice; however, no action was taken to sand, salt, or clear the barge deck's regularly used walkway of snow and ice.

- Miners travel barge walkways to obtain draft readings and collect sand samples several times a shift while loading each barge. Barges were not included in the workplace examinations being conducted. Management failed to ensure that a competent person examined each working place, at least once each shift, for conditions which may adversely affect safety or health.
- The victim walked onto a snow and ice covered barge to obtain draft readings on the opposite side of the barge. The victim slipped on the barge and fell into the water. During attempted rescue within minutes from falling overboard, the victim sank into the water instead of floating to the surface, indicating the victim was not wearing a life jacket.
- Management failed to provide and require safety belts and lines for the miners working on the barges when there was a clear danger of falling.
- Management failed to provide safe work procedures that addressed snow and ice accumulation on deck surfaces and the additional safety risk that it poses. During the loading of the barges, the slope of the deck varies based on the loading process. At the time of the accident, the barge decking was sloping approximately 14 percent (8 degrees) away from the dredge.

### **TRAINING AND EXPERIENCE**

Prior to starting work for Hunter Sand & Gravel, LLC, Burnham had about 55 months of mining and/or river experience that included the following: loading barges, trains, operating a front-end loader, putting together barges and making and cutting tows. On February 14, 2013, Burnham completed 24 hours of Part 48 New Miner Training through the Illinois Eastern Community College at the John A. Logan College and began working at the Calvert City Terminal. Burnham received Part 46 Newly Hired Experienced Miner Training when he began working for Hunter Sand & Gravel, LLC on October 22, 2013.



