

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface Mine  
(Construction Sand and Gravel)

Fatal Machinery Accident  
June 13, 2020

Carl's Dragline Service (K439)

at

Fast Pak Crusher  
Salt River Sand & Rock  
Buckeye, Maricopa County, Arizona  
ID No. 02-02320

Accident Investigators

Lee A. Hughes  
Supervisory Mine Inspector

Peter Del Duca  
Assistant District Manager

Originating Office  
Mine Safety and Health Administration  
Western Region  
Denver District  
P.O. Box 25367, DFC  
Denver, CO 80225-0367  
Dustan Crelly, District Manager

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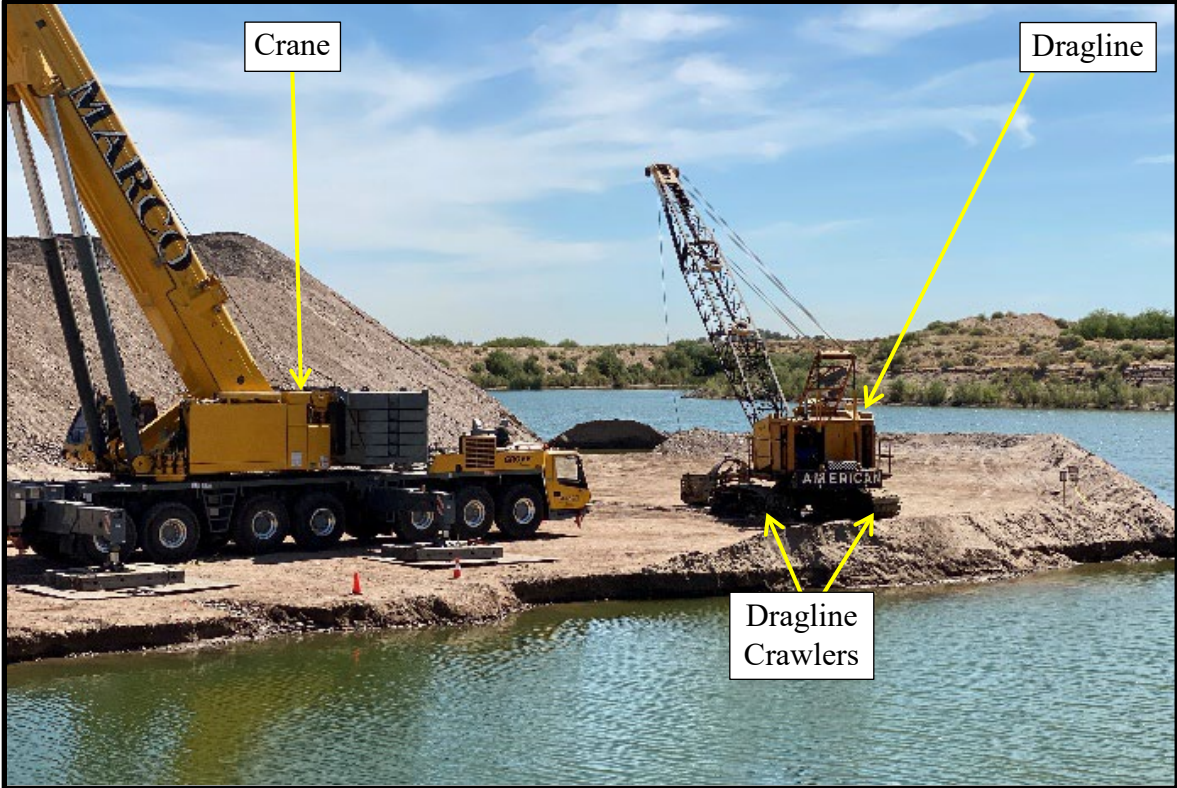
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Accident Scene after Recovery of the Dragline

OVERVIEW

On June 13, 2020, at approximately 10:30 a.m., Blayke Davis, a 25-year-old dragline operator with nearly three years of total mining experience, died while operating a dragline. The dragline was found in approximately twenty-five feet of water, and the victim was found inside the dragline after it was removed from the water. The accident occurred because Carl’s Dragline Service did not ensure the equipment operator maintained control of equipment while extracting material.

GENERAL INFORMATION

Salt River Sand & Rock owns the site of this accident in Buckeye, Maricopa County, Arizona. They contract the excavation, crushing and screening of the material from this site. The material is then sold to the construction industry.

Officers for Salt River Sand & Rock at the time of the accident were:

- Roger R. Smith..... Chief Executive Officer
- Bruce Dyer ..... Vice President Aggregates
- Peter J. Kuehner ..... Chief Operating Officer

Carl’s Dragline Service is a contract extraction service, located in the city of Buckeye, Maricopa County, Arizona. Salt River Sand & Rock contracted Carl’s Dragline Service to extract sand and

gravel from the submerged deposit and stack it for later use. Carl's Dragline Service has been extracting material from the pit where the accident occurred intermittently for approximately 14 years.

The Mine Safety and Health Administration (MSHA) last inspected this site on August 25, 2014 as part of a regular inspection of Salt River Sand & Rock, Fast Pak Crusher MSHA ID 02-02320. Salt River Sand & Rock had not notified MSHA of commencement of mining activities at this site as required by 30 CFR §56.1000. A non-contributory citation was issued for this violation. On August 4, 2020, MSHA posted a reminder of this requirement on its website. The non-fatal days lost (NFDL) incident rate for Fast Pak Crusher for 2019 was 0, compared to the national average of 1.47 for mines of this type.

#### DESCRIPTION OF THE ACCIDENT

On June 13, 2020, at 5:00 a.m., Davis started work performing a pre-operational examination of the American Hoist and Derrick Company 599C Dragline. After he completed his examination, he began to extract material from the submerged deposit. At approximately 8:00 a.m., Carl Schaab, Carl's Dragline Service's Owner, arrived on the scene to check on Davis. Davis and Schaab discussed the "cut line", the line where the dragline would excavate the shoreline, to even the bank of the pit (see Appendix A). Schaab told Davis to work until 2:00 p.m. and then meet him at Schaab's house at 3:00 p.m.

Schaab left the site around 8:50 a.m., and had no further contact with Davis. At 3:33 p.m., after failing to contact Davis, Jesse Sillerud, Dragline Operator, called Schaab to determine if Schaab had heard from Davis. At 4:10 p.m., Schaab asked Sillerud to go to the site and check on Davis. At 4:45 p.m., Sillerud arrived on scene and called Schaab to tell him that Davis was missing and the dragline was in the water.

#### RESCUE AND RECOVERY EFFORTS

Sillerud called for emergency medical services (EMS), and Schaab drove out to the scene. Law enforcement officers and EMS arrived at approximately 5:15 p.m., and continued to search for Davis. At approximately 8:45 p.m., rescuers halted search efforts for the night.

The search resumed the next morning June 14, 2020. Law enforcement officers called rescue divers from Maricopa County. The rescue divers were unable to locate Davis inside the cab of the dragline because visibility in the water was poor. Law enforcement officers brought in a robot with sonar to search the area around the dragline, but they were unable to locate Davis. On June 14, 2020, at approximately 4:45 p.m., rescuers halted search efforts and recommended recovering the dragline from the water.

Recovery efforts resumed on June 15, 2020, when Marco Crane and Rigging Company (Marco) brought a RTC550 Crane to the mine to remove the dragline from the water. Divers from Commercial Divers International (CDI) attached rigging to the submerged dragline. While Marco set up the crane, CDI searched the dragline. At 4:57 p.m., CDI divers located Davis in

the engine compartment of the dragline, but were unable to safely remove his body. CDI divers returned to the surface and worked with Marco to rig the hoist lines to the submerged dragline.

At 8:57 p.m., Marco hoisted the dragline from the water and placed it on the bank where the medical examiner was able to recover Davis. The medical examiner determined that the cause of death was drowning.

## INVESTIGATION OF THE ACCIDENT

On June 13, 2020, at 5:34 p.m., Shane Bloomfield, Safety Manager, called the Department of Labor National Contact Center (DOLNCC). The DOLNCC contacted Lee Hughes, Supervisory Mine Safety and Health Inspector. Hughes contacted Peter Del Duca, Assistant District Manager. Del Duca contacted James Eubanks, Supervisory Mine Safety and Health Inspector. Eubanks dispatched Antonio Trujillo, Mine Safety and Health Inspector, to the mine. Upon arrival, Trujillo issued an order under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners.

On June 15, 2020, at 9:15 a.m., Hughes and Del Duca arrived on the scene to continue the investigation. MSHA's accident investigation team oversaw recovery efforts, conducted a physical examination of the accident, interviewed miners, and reviewed conditions and work procedures relevant to the accident. See Appendix B for a list of persons who participated in the investigation.

## DISCUSSION

### Location of the Accident

The accident occurred in the pit adjacent to the stockpile (see Appendix C). The dragline was positioned in order to avoid a nearby bank erosion. The water in the pit was approximately 25 feet deep.

### Weather

On the day of the accident, the weather was calm and sunny, with a high temperature of approximately 106 degrees Fahrenheit. Weather was judged not to be a factor in the accident.

### Equipment Involved

Davis was operating an American Hoist and Derrick Company 599C dragline. The dragline has two crawlers which allow the dragline to move from place to place. Investigators reviewed the position of the air-actuated controls and the hoist and drag drum positions (see Appendix D).

The dragline operator can lock the crawlers and prevent any crawler movement by engaging the crawler travel locks. Investigators observed that the crawler travel locks were in the "no restraint" position, which allows crawler movement, and the drag drum was in the "engaged" position.

The crawler travel locks are gravity set pawls which engage in the crawler travel shaft jaw clutches to keep the machine from moving. The drag drum is used to pull the bucket toward the dragline.

Based on the positions of the controls in the dragline, the victim lowered the bucket into the water and engaged the drag drum to draw or pull the dragline bucket toward the dragline. This is how the dragline excavates material from the bottom or submerged deposit. With the crawler travel locks in the “no restraint” position and the drag drum in the “engaged” position, when the victim attempted to draw in the dragline bucket, it caused the dragline to be pulled into the water. A review of the dragline revealed that the resulting force from the water pushed him through a 17-inch doorway and into the engine housing. The dragline’s operating manual states “[t]he travel locks should be set with the machine stopped.”

### Examinations

Investigators were unable to recover a pre-operational examination book from the dragline; however, interviews indicated that there were no known safety defects on the equipment.

### Training and Experience

Davis had almost three years of total experience operating the dragline involved in the accident. All of this experience was with Carl’s Dragline Service operating the dragline at the same operation, excavating material from the submerged deposit in the same body of water. After reviewing the training records, it was determined that Davis had received all training required by 30 CFR Part 46. Schaab task trained Davis on how to operate the dragline.

## ROOT CAUSE ANALYSIS

The accident investigation team conducted a root cause analysis to identify the underlying cause of the accident. The team identified the following root cause and the contractor implemented the corresponding corrective action to prevent a recurrence.

Root Cause: Carl’s Dragline Service did not ensure that equipment operators maintained control while operating equipment.

Corrective Action: Carl’s Dragline Service has designed and successfully tested a system that prevents the drag drum from engaging when the crawler travel locks are not engaged. This system will be installed on the dragline prior to putting it back into service. The system will also be installed on all draglines operated by the company. Additionally, this system provides a visual indication when the crawler travel locks are not engaged. All miners will be trained on the new safety systems once the dragline is operational.

## CONCLUSION

On June 13, 2020, at approximately 10:30 a.m., Blayne Davis, a 25-year-old dragline operator with nearly three years of total mining experience, died while operating a dragline. The dragline was found in approximately twenty-five feet of water, and the victim was found inside the dragline after it was removed from the water. The accident occurred because Carl's Dragline Service did not ensure the equipment operator maintained control of equipment while extracting material.

Approved by:

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Dustan Crelly  
Denver District Manager

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Date

## ENFORCEMENT ACTIONS

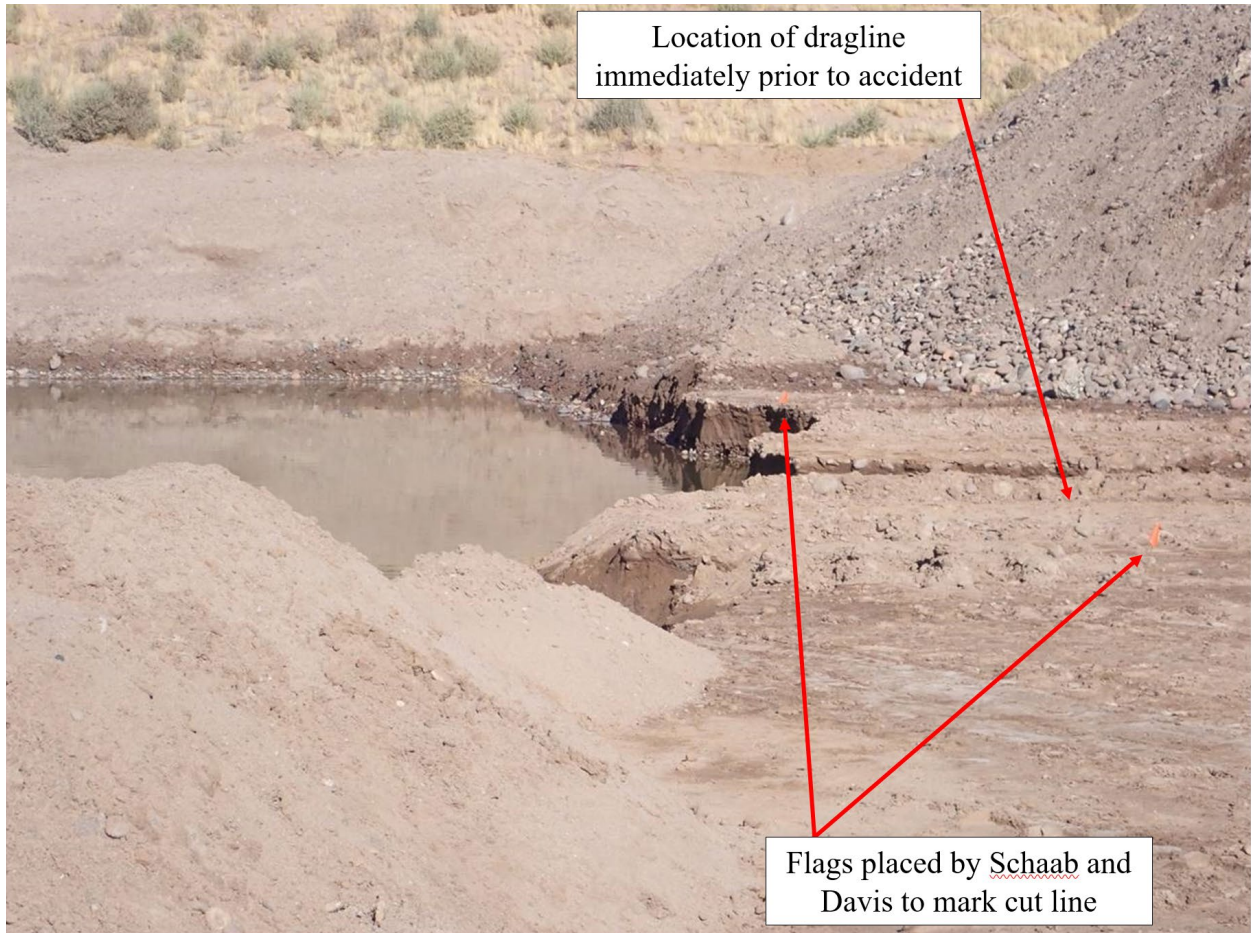
Order No. 9477382 – Issued June 13, 2020, at 9:50 p.m., under the provision of section 103(k) of the Federal Mine Safety and Health Act of 1977 (Mine Act):

A non-fatal accident occurred at this operation on June 13, 2020 at approximately 3:00 pm when a miner was unable to be located. The miner had been operating a dragline in the pit excavating material. This order is issued to assure the safety of all persons at this operation. It prohibits all activity at the accident site until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an Authorized Representative for all actions to recover and/or restore operations to the affected area

Citation No. 9346942 – Issued to Carl's Dragline Service (K439), under the provision of section 104(a) of the Mine Act for a violation of 30 CFR § 56.9101.

A fatal accident occurred on June 13, 2020, when the dragline operator failed to maintain control of the dragline he was operating. While mining material from the submerged deposit, the victim did not engage the crawler travel locks, and the drag hoist pulled the machine into the water.

Appendix A  
Photograph of Dragline Location Before Accident





Appendix B  
Persons Participating in the Investigation

Salt River Sand & Rock

Shane Bloomfield..... Safety Manager  
Samuel Rivas ..... Safety Specialist  
Kyle Henderson ..... Director of Aggregate Operations

Carl's Dragline Service

Carl Schaab ..... Owner  
Eric Cartier ..... Foreman  
Jesse Sillerud..... Dragline Operator

Arizona State Mine Inspector

Bill Schiffers ..... Deputy Mine Inspector  
Karen Johnson..... Deputy Mine Inspector

Mine Safety and Health Administration

Lee Hughes ..... Supervisory Mine Safety and Health Inspector  
Peter Del Duca ..... Assistant District Manager  
Antonio Trujillo ..... Mine Safety and Health Inspector

Appendix C  
Photograph of Accident Area



Appendix D  
Photograph of Dragline Compartments

