

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Underground  
(Coal)

Fatal Drowning Accident  
August 18, 2023

Mine No. 39  
Twin State Mining, Inc.  
Elbert, McDowell County, West Virginia  
ID No. 46-09261

Accident Investigators

James Grimmitt  
Mine Safety and Health Inspector

Greggory Ward  
Supervisory Mine Safety and Health Inspector

Originating Office  
Mine Safety and Health Administration  
Pineville District  
4499 Appalachian Highway  
Pineville, WV 24874  
Craig Plumley, District Manager

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## OVERVIEW

On August 18, 2023, at approximately 9:40 p.m., Christopher Finley, a 39 year-old section foreman, with approximately 15 years of mining experience, drowned while installing a discharge waterline for a dewatering pump.

The accident occurred because the mine operator did not: 1) comply with the approved ventilation plan to prevent accumulations of water affecting safe travel, and 2) conduct an adequate weekly examination of the return air course.

## GENERAL INFORMATION

Twin State Mining, Inc. owns and operates Mine No. 39, an underground coal mine located in Elbert, McDowell County, West Virginia. The mine employs 126 miners and operates two production shifts and one maintenance shift five days per week. The mine uses the room and pillar mining method to extract coal with continuous mining machines which load coal into shuttle cars. The shuttle cars transfer the coal to a belt conveyor to transport the coal to stockpiles on the surface.

The principal management officials for Mine No. 39 at the time of the accident were:

Ronald Price  
Parker Purdue  
Dana Adkins

Mine Superintendent  
General Mine Foreman  
Chief Electrician

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on June 28, 2023. The 2022 non-fatal days lost incident rate for Mine No. 39 was 0.64, compared to the national average of 3.22 for mines of this type.

#### DESCRIPTION OF THE ACCIDENT

On August 18, 2023, at 3:00 p.m., Finley's shift began. Finley attended a foreman meeting to discuss the shift's duties. According to interviews, after the meeting, Ronald Estep, Evening Shift Foreman, asked Finley to help him install a new discharge waterline. Finley helped Estep gather supplies before traveling underground. At approximately 5:50 p.m., Estep and Finley arrived underground. Estep told Finley to go to the Punch Out portal and wait for him. Estep took a scoop inby to the B1 belt head to deliver and set up a scoop charger. At approximately 6:30 p.m., Finley drove his personnel carrier to the Punch Out portal and went to the surface to get two 3-inch, 300-foot rolls of waterline for the No. 2 pump. According to interviews, Finley walked over to the left return and began laying out the waterline in water and mud up to his waist. Finley experienced a lot of difficulty in walking due to the depth of the water and thickness of the mud and was stuck in the mud several times. Due to the ground conditions, Finley had become extremely wet and rolled around in rock dust in an attempt to dry his clothing. Finley stopped installing the waterline and waited at his personnel carrier for Estep to assist him.

After finishing up with the scoop battery charger, Estep called Timothy Nichols, Mine Examiner, and asked for a ride to meet back with Finley. At approximately 9:30 p.m., Nichols and Estep arrived near the Punch Out portal. Nichols walked outside to the surface and began conducting examinations while Estep and Finley discussed how they would be installing the waterline. Finley energized the No. 2 pump at the power center between No. 5 and No. 6 entries. Upon entering the left return, Estep told Finley to hold the spool of waterline while he stretched it out. Nichols walked back underground into the left return through a personnel door where he met with Finley near the No. 2 pump. Finley was holding a spool of waterline while Estep was pulling it. Finley and Nichols discussed how deep the water was and how earlier he had rolled around in rock dust trying to dry off. Nichols told Finley to be careful and left to continue his examination.

According to interviews, Estep and Finley stayed within verbal communication while Estep pulled the waterline inby one crosscut, approximately 100 feet. When Finley stopped responding, within two minutes, Estep went to check on him. Estep walked back to Finley and found him face down in approximately eight to ten inches of water. Estep ran to Finley and pulled him up from the water yelling his name. Finley gave no response.

At 10:00 p.m., Estep sent an emergency distress call from his radio and began calling out for help while holding Finley up out of the water. Daniel Collins, Roof Bolter, heard the emergency call on the radio. Knowing their location, Collins ran through the personnel door and saw Estep holding Finley. Collins checked Finley's pulse but didn't find one. Collins went back through the door and called Timothy Francis, Dispatcher, to inform him they needed help. At 10:04 p.m., Francis called

911 to request an ambulance. Nichols and William Slagle, Supply Crew, assisted Collins in carrying Finley through the personnel door. Collins checked for a pulse again and still didn't find one. Collins and Slagle began cardiopulmonary resuscitation (CPR).

Charles Waddell, Section Foreman and Jeremy Lowe, Outby Construction Foreman, were in the mine office when they heard Estep's emergency call. Waddell drove his personal vehicle with Lowe to the Punch Out portal. Waddell ran underground and assisted Slagle and Collins with CPR. STAT Emergency Medical Service ambulance (STAT) arrived and took over rescue efforts. STAT transported Finley to the Welch Community Hospital where Jane Tallman, Doctor of Osteopathic Medicine, pronounced Finley dead at 10:44 p.m.

## INVESTIGATION OF THE ACCIDENT

On August 18, 2023, at 10:38 p.m., Amos Keene, Dispatcher, contacted the Department of Labor National Contact Center (DOLNCC) to report the accident. The DOLNCC contacted Kenneth Butcher, Supervisory Mine Safety and Health Inspector. Butcher notified Clark Blackburn, Acting District Manager and Mark Muncy, Supervisory Mine Safety and Health Inspector. Muncy called Gregory Ward, Supervisory Mine Safety and Health Inspector, and James Grimmatt, Mine Safety and Health Inspector, and sent them to the mine. Muncy, Ward, and Grimmatt arrived at the mine on August 19, 2023. At 12:30 a.m. Grimmatt issued an order under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners and preservation of evidence.

MSHA investigators met with West Virginia Office of Miners' Health Safety and Training (WVOMHST) personnel and company officials to discuss the investigation. MSHA investigators, in conjunction with WVOMHST, conducted an examination of the accident scene, took photographs, collected air quality bottle samples, acquired written statements from miners, and reviewed conditions and work procedures relevant to the accident. Investigators also examined the dewatering pump and circuitry installed in the accident area. See Appendix A for a list of persons who participated in the investigation.

On August 23, 2023, Robert Bates and Jordan Rose, Electrical Engineers from MSHA's Technical Support Division, traveled to the mine to participate in the investigation. Investigators met with Price and Adkins to inform them testing of the No. 2 pump and circuitry was necessary for the investigation. Investigators, along with Price and Adkins, traveled to the accident scene. They inspected and performed tests on the pump and its circuitry. Investigators determined MSHA's Technical Support needed to do additional testing in a controlled environment. Investigators took the circuit breaker, pump, controller switch, and cables into custody at the mine site and transported the items to the MSHA office in Pikeville, Kentucky. On September 1, 2023, investigators performed examination and testing of these components.

## DISCUSSION

### Location of the Accident

The accident occurred at the No. 1 crosscut between the No. 3 and No. 4 entries in the left return air course on the Punch Out portal side of the mine (see Appendix B).

### Equipment Involved

The No. 2 pump is a single phase 240-volt AC, Stancor Model P-20CE submersible pump (see Appendix C). The pump circuit received power from a 240-volt receptacle in a power center located one crosscut in by the portal between the No. 5 and No. 6 entries. A 30-amp, Siemens Model BF230, ground fault circuit interrupter (GFCI) circuit breaker provided protection for the receptacle and connected loads.

A power cable extended from the receptacle to a pump control switch (Stancor, Model CB801) in the return air course approximately 165 feet from the power center. The cable hung from the mine roof for the entire distance. The cable contained five splices and was composed of three different types of cable: No.14 AWG, three-conductor; No.12 AWG, three-conductor, and No.10 AWG, five-conductor.

The pump controller was a small, externally operable, three-pole circuit breaker (Airpax, Series 219, 5.5 A) inside an MSHA-certified enclosure. A No.14 AWG, five-conductor cable, approximately 38 feet long, extended from the control switch to the pump.

### Testing and Examination

During the onsite investigation, investigators observed several hazardous conditions while examining the No. 2 pump and circuitry (see Appendix D):

- 1) The GFCI test button would not open (trip) the 240-volt AC circuit breaker.
- 2) The power cable had a 1-inch opening in the outer jacket exposing the inner current carrying conductors. Moisture was also present inside the opening.
- 3) The handle on the control switch was stuck in the on (closed) position.

During the additional testing and examination at the MSHA Pikeville, KY office, investigators discovered other hazardous conditions:

- 1) The 240 VAC circuit breaker would not trip during ground fault condition.
- 2) Moisture was found inside all five splices.
- 3) Suitable connectors were not used in two of the splices. The conductors in these splices were only twisted together.

The test results of the air quality bottle samples collected in the accident area were negative for atmospheric contamination.

Investigators determined the following:

1. The pump circuit was energized at the time of the accident.
2. The pump circuit wiring contained a number of faulty splices capable of exposing the standing water or other wet surfaces to electrical energy.
3. Some of these faulty splices were in contact with standing water or surfaces rendered wet from the standing water.
4. The standing water was dirty and consisted of significant contaminants that typically increase the electrical conductivity of the water.
5. The circuit breaker would not trip during an electrical shock (ground fault condition).

MSHA issued five noncontributory citations and one order because of these electrical violations.

In this accident, investigators could not determine why Finley fell and drowned in approximately eight to ten inches of water. Investigators were unable to determine if the hazardous conditions in the No. 2 pump circuit caused a nonlethal electrical shock that caused the victim to lose consciousness and fall into the water. The Medical Examiner's report did not indicate electrical shock as a contributing factor to the cause of death.

#### Ventilation Plan

Investigators determined that the mine operator did not comply with the approved ventilation plan. Page one, paragraph two states accumulation of water will be controlled primarily by natural drainage, supplemented by pumping, to prevent such accumulations from affecting the bleeder ventilation system and safe travel. Investigators measured water and mud up to 22 inches in depth within the accident area. The mud was extremely thick and created difficulty while walking through it.

Finley had started the pump just before the accident occurred. The pump was still pumping when investigators arrived. The depth of the water would have decreased by the time the investigators arrived at the accident scene. Statements received by investigators reported water being up to the victim's waist before the accident occurred. The mine floor was uneven and had irregularities which caused water and mud to be deeper in areas other than where the accident occurred. The depth of the water and mud also prevented observing tripping and stumbling hazards underneath that miners otherwise would have noticed. Investigators determined that all of these conditions: tripping and stumbling hazards, or depth of water and mud, or both, contributed to the accident.

#### Training and Experience

Finley had approximately 15 years total mining experience with 15 weeks experience at this mine. Finley received experienced miner training at this mine site on May 10, 2023. Finley received West Virginia foreman certification on November 5, 2015, and completed all training in accordance with MSHA Part 48 training standards. Investigators do not believe the victim's limited time at the mine was a factor in the accident.

#### Examinations

Argile Maynard, Weekly Examiner, conducted the last weekly examination of the return air course on August 17, 2023. During this examination, and the previous four examinations, Maynard did not note any hazardous conditions in the accident area. Investigators determined the waist deep water, thickness of mud on the mine floor, and the tripping hazards existed for an extended period of time and could not have accumulated after the last examination. Investigators also determined that although the mine operator recorded the weekly and monthly electrical examinations for the No. 2 pump, the electricians did not report any of the hazardous conditions found by the investigators. Investigators have determined the inadequate weekly examination of the return air course contributed to the accident.

## 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 accident occurred because the mine operator did not comply with the approved ventilation plan to prevent accumulations of water affecting safe travel.

Corrective Action: The water and mud in the affected area has been removed, gravel has been installed, and the tripping/stumbling hazards have been removed to create a safe travelway.

2. Root Cause: The accident occurred because the mine operator did not conduct an adequate weekly examination.

Corrective Action: The mine operator has provided retraining for all mine examiners concerning their responsibility recognizing, reporting, and correcting hazardous conditions during weekly examinations.

## CONCLUSION

On August 18, 2023, at approximately 9:40 p.m., Christopher Finley, a 39 year-old section foreman with approximately 15 years of mining experience, drowned while installing a discharge waterline for a dewatering pump.

The accident occurred because the mine operator did not: 1) comply with the approved ventilation plan to prevent accumulations of water affecting safe travel, and 2) conduct an adequate weekly examination of the return air course.

Approved By:

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Craig Plumley  
District Manager

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Date



## ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Twin State Mining, Inc. on August 19, 2023.

A fatal accident occurred on August 18, 2023, at approximately 9:40 p.m. This order is being issued under the authority of the Federal Mine Safety and Health Act of 1977 under Section 103(k) of the Federal Mine Safety and Health Act of 1977, to insure the safety of all persons at the mine and requires the operator to obtain the approval of an authorized representative of MSHA of any plan to recover any person in the mine or to recover the mine or affected area. This order prohibits any activity in the affected area. The operator is reminded of the obligation to preserve all evidence that would aid in investigating the cause or causes of the accident in accordance with 30 CFR 50.12.

2. A 104(a) citation was issued to Twin State Mining, Inc. for a violation of 30 CFR 75.370(a)(1).

On August 18, 2023, a fatal accident occurred when a miner drowned at the No. 1 crosscut in the left return air course at the Punch Out portal side while installing waterline. The mine operator did not comply with the approved ventilation plan. Page one, paragraph two states accumulation of water will be controlled primarily by natural drainage, supplemented by pumping, to prevent such accumulations from affecting the bleeder ventilation system and safe travel. After the fatal accident, black water and thick mud were found from rib to rib, starting at the portal and continuing in by two crosscuts, measuring up to 22 inches in depth in the intersection of the No. 1 crosscut. Extraneous material such as six-inch by six-inch crib blocks, eight-inch by eight-inch by 16-inch cinder blocks, and large rocks were laying on the uneven mine floor under this water and mud creating stumbling and tripping hazards. Miners work and travel through this area at least weekly while conducting air course and electrical examinations.

3. A 104(a) citation was issued to Twin State Mining, Inc. for a violation of 30 CFR 75.364(b)(2).

On August 18, 2023, a fatal accident occurred when a miner drowned at the No. 1 crosscut in the left return air course at the Punch Out portal side while installing waterline. The mine operator did not conduct an adequate examination of the No. 1 crosscut of the left return on the Punch Out portal side. The mine operator did not report any hazards on the weekly examination in this area. After the fatal accident, black water and thick mud were found from rib to rib, starting at the portal and continuing in by two crosscuts, measuring up to 22 inches in depth in the intersection of the No. 2 crosscut. Extraneous material such as six-inch by six-inch crib blocks, eight-inch by eight-inch by 16-inch cinder blocks, and large rocks were laying on the uneven mine floor under this water and mud creating stumbling and tripping hazards. The last weekly examination of the return air course was conducted on August 17, 2023. During this examination and the previous four examinations no hazardous conditions were recorded in the accident area. Investigators determined the depth of water, thickness of mud on the mine floor, and the tripping hazards existed for an extended period of time. These hazards could not have accumulated after the last examination and should have been observed and reported by the examiner.

## APPENDIX A – Persons Participating in the Investigation

### Twin State Mining, Inc.

Ronald Price	Mine Superintendent
Dana Adkins	Chief Electrician
Ronald Estep	Evening Shift Foreman
Charles Waddell	Section Foreman
Jeremy Lowe	Outby Construction Foreman
Willbert Addair	Loader Operator
Jerry Collins	Roof Bolter
Timothy Francis	Dispatcher
Amos Keene	Dispatcher
Steven Jeffers	Electrician
Timothy Nichols	Mine Examiner
William Slagle	Supply Crew
Darrell Roberts	Move Crew

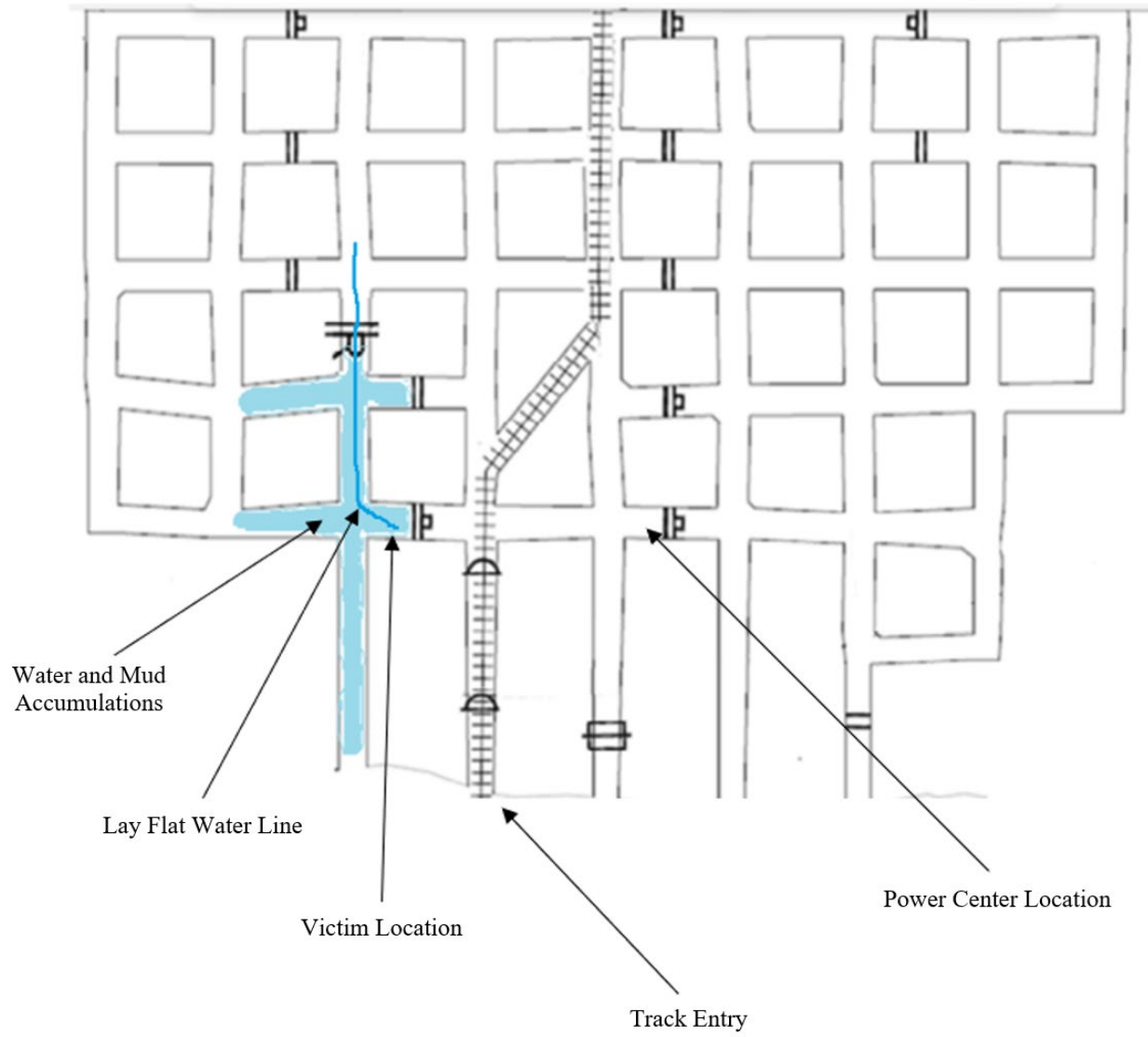
### West Virginia Office of Miners' Health Safety and Training

Michael Pack	Assistant Inspector at Large
Janice Martin	Assistant Inspector at Large
Donna Kessinger	District Inspector
Chad Daniels	Electrical Inspector

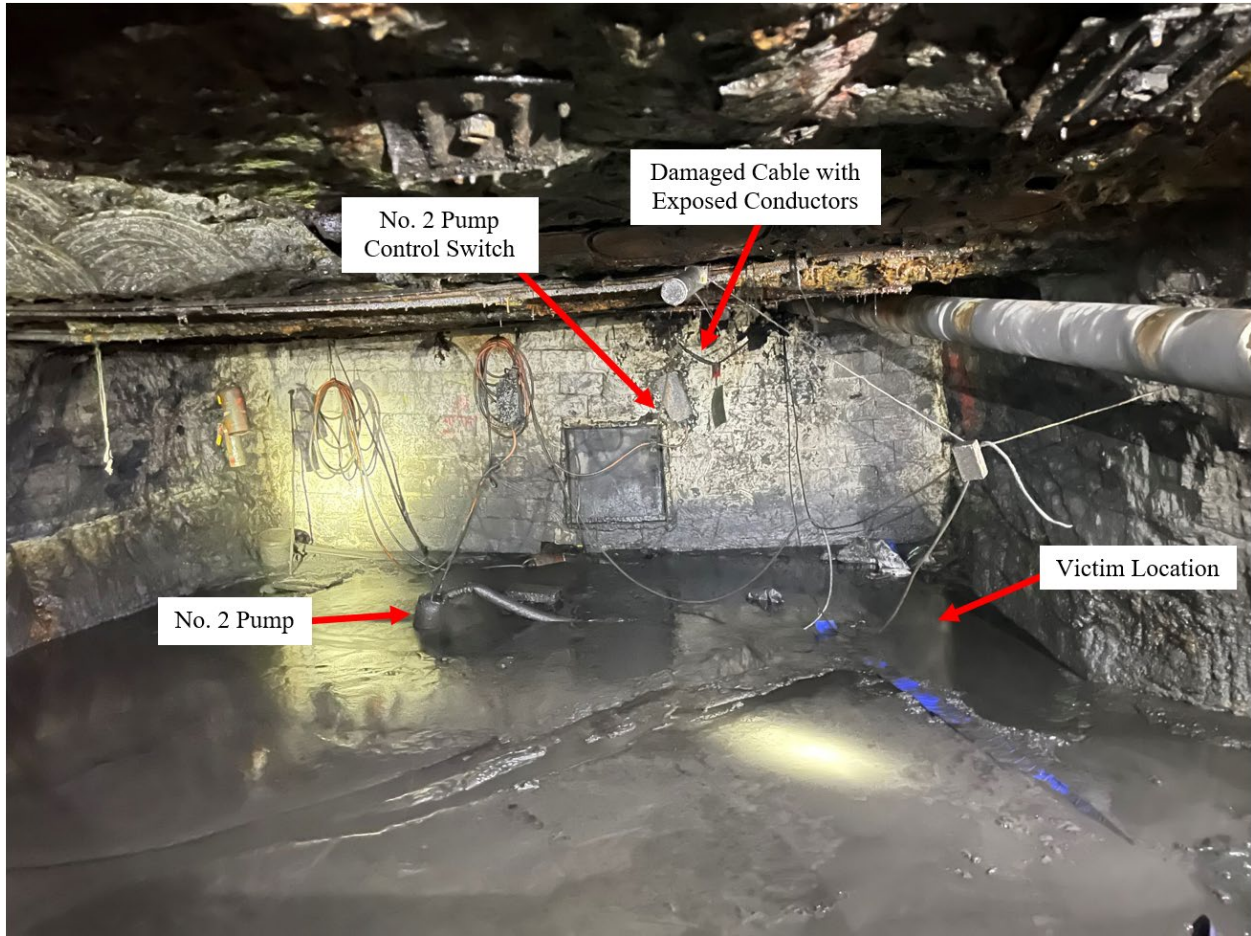
### Mine Safety and Health Administration

Mark Muncy	Supervisory Mine Safety and Health Inspector
Greggory Ward	Supervisory Mine Safety and Health Inspector
James Grimmett	Mine Safety and Health Inspector
Robert Bates	Technical Support, Electrical Engineer
Jordon Rose	Technical Support, Electrical Engineer

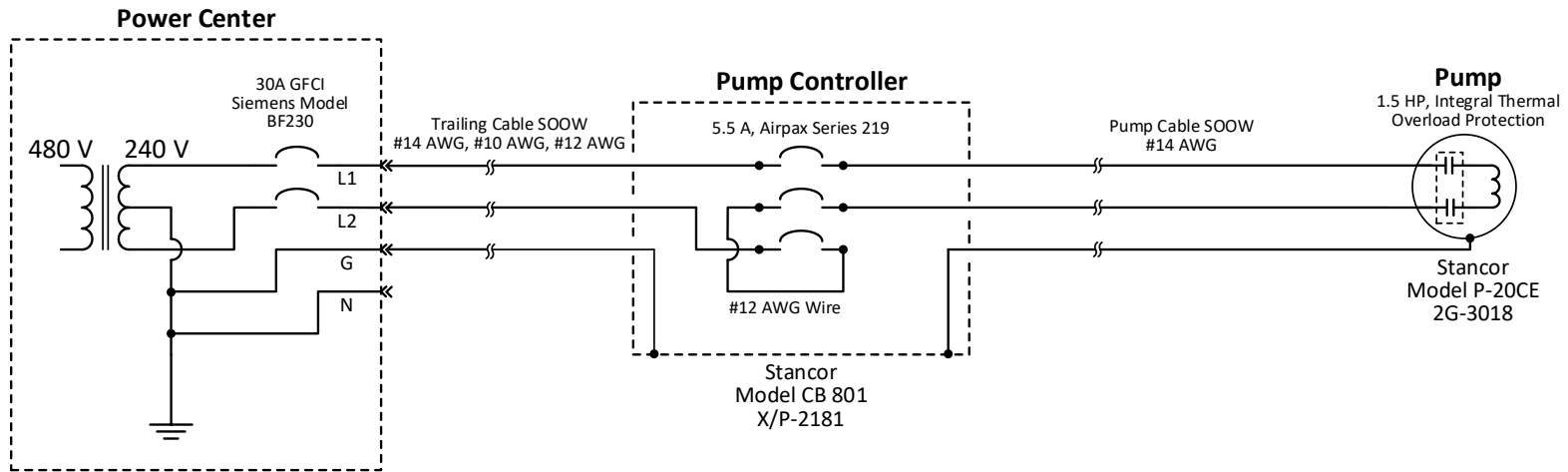
APPENDIX B – Mine Map



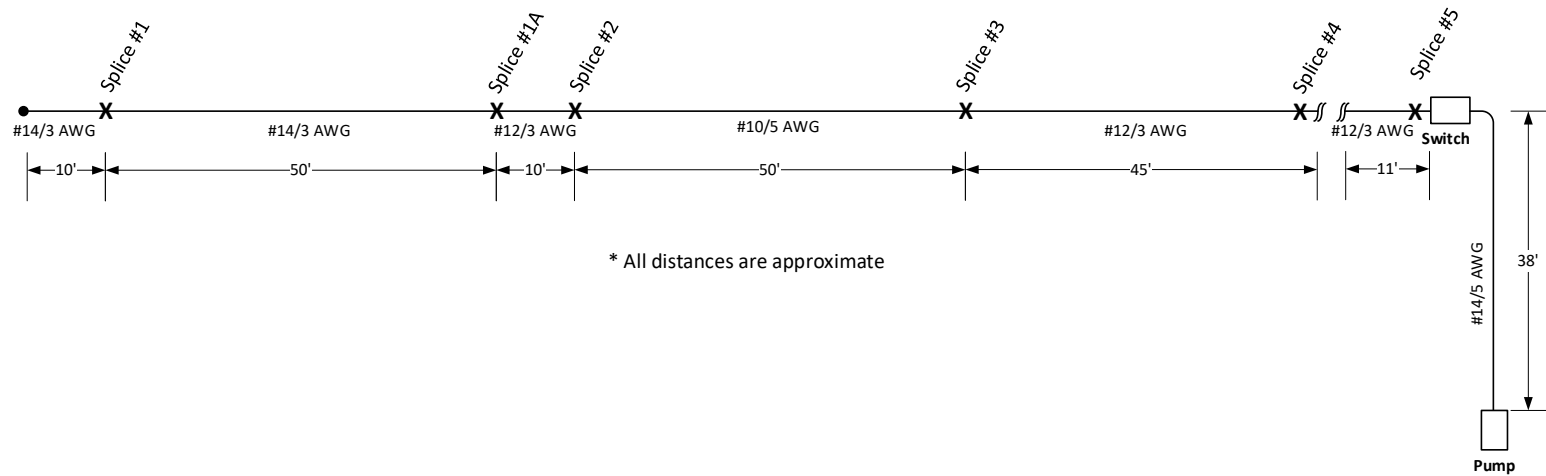
APPENDIX C – Photograph of the Accident Scene



## APPENDIX D – Electrical Diagrams



*Figure 1 - Submersible Pump Circuit*



*Figure 2 - Cable Sections and Splices*