

**WEST VIRGINIA OFFICE OF MINERS' HEALTH, SAFETY AND TRAINING**

**REPORT OF FATALITY**

**BELT FATALITY**

**DECEMBER 23, 2019**

**MARSHALL COUNTY COAL COMPANY**

**MARSHALL COUNTY MINE**

**PERMIT NO. U00003383A**

**REGION ONE**

**14 COMMERCE DRIVE, SUITE ONE**

**WESTOVER, WEST VIRGINIA 26501**

**EDWARD PEDDICORD, INSPECTOR-AT-LARGE**

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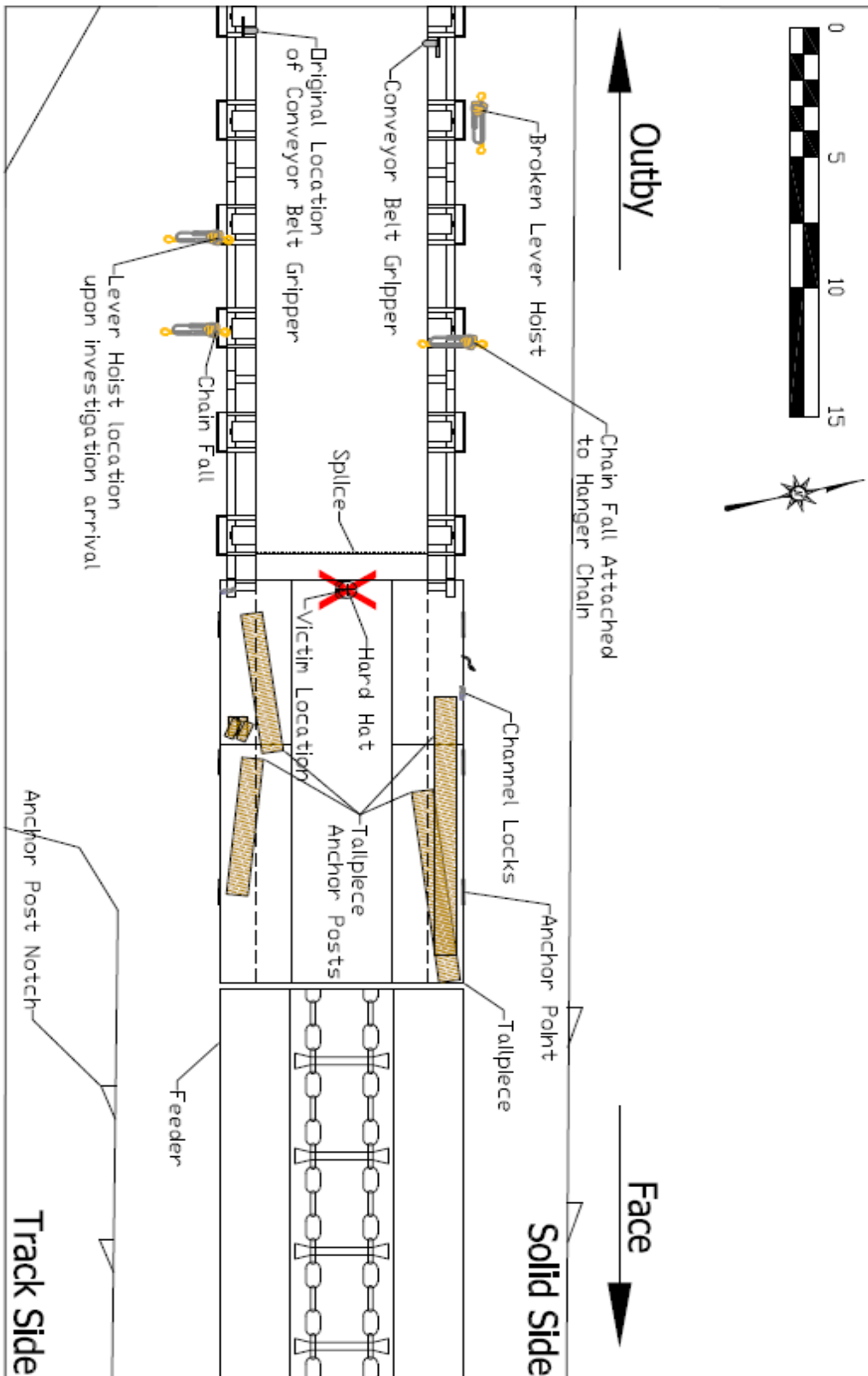
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## **GENERAL INFORMATION**

The Marshall County Coal Company, Marshall County Mine, Permit No. U00003383A is located near Cameron, Marshall County, West Virginia. The underground mine employs approximately 864 miners. The Pittsburgh No. 8 seam is accessed by the Cameron, Grapevine, Blake Ridge and Fish Creek portals as well as slopes at the coal preparation plant and the Fish Creek portal. The mine produces approximately twelve (12) million tons of coal annually from four (4) miner and two (2) longwall units. Coal is transported from the working sections in the mine via conveyor belts to the slope at the coal preparation plant. Battery, trolley and diesel-powered vehicles are used to transport supplies and mine personnel.

## **DESCRIPTION**

On December 23, 2019, at approximately 4:15 p.m., Raymond L. Starkey Jr. 21 years of age, was fatally injured while assisting in the installation/advancement of the Cameron Corridor continuous miner section conveyor belt. This accident occurred in the #1 entry, #67 wall, on the Cameron Corridor. Mr. Starkey had a total of 2 years and 4 months mining experience with 8 months and 28 days at the Marshall County Mine.

On December 23, 2019, at 4:28 p.m., the Mine and Industrial Accident Rapid Response System was notified that an accident had occurred at the Marshall County Mine. At 5:21 p.m., West Virginia District Mine Inspector William Coen received a phone call from Ryan Carman, Safety Director of Marshall County Mine, that the accident had resulted in a fatality. Mr. Coen called Edward Peddicord, Inspector-at-Large and John Meadows, Assistant Inspector-at-Large of the West Virginia Miners' Health, Safety and Training and was instructed to go directly to the Marshall County Mine. A joint investigation with the Mine Safety and Health Administration, Marshall County Coal Company, Murray Energy Corporation and the United Mine Workers of America began immediately.

On December 23, 2019, at approximately 11:25 a.m., a crew of miners arrived at the Cameron Corridor section conveyor belt to prepare for the impending belt installation/advancement. This crew consisted of Marshall County Coal Company employees; Kenny Defibaugh, Terry Smitley, Kevin Bradshaw, Kyle Stephenson, Brian Hammerquist and Raymond Starkey Jr. -general inside laborers; Justin Nething, Trey Scott, Kenneth Goddard, Devan Potts and Vince Gillies-belt men, under the supervision of Gregory Jones, belt foreman.

The crew was assigned various support jobs to prepare for the installation/advancement of 300-feet of conveyor belt and structure. This included assembly of the main line belt structure, unloading of 8-inch waterline and chains for hanging belt structure, construction of belt stoppings and gathering the equipment needed at the site.

At approximately 2:30 p.m., Mr. Jones instructed Mr. Nething and Mr. Gillies to travel outby to the belt starter box to place the belt in the manual position. The 5 North #3 main line belt (which the Cameron Corridor belt dumps on) was off, so the Cameron Corridor belt had to be put in manual so the belt men could position the belt splice near the tail. During this time, the preparations at the tailpiece were continuing. Mr. Jones, who would be operating the belt on manual from the on/off switch located approximately 300 feet inby the tailpiece had instructed Mr. Scott to position the belt splice outby the tailpiece approximately 6 feet. Communicating using cap lights, Mr. Scott, who at that time was on the track side of the belt, flagged Mr. Jones that the splice was in position and to turn the belt off.

Mr. Scott then joined Mr. Goddard outby the tailpiece on the track side of the belt, unhooking the yellow water line from the 8-inch waterline. Mr. Nething and Mr. Gillies were informed by Mr. Jones that the belt splice was in position and instructed them to lock and tag the belt out. The belt was locked and tagged out at approximately 3:15 p.m. Mr. Nething and Mr. Gillies traveled back to #48 wall track spur to install belt clamps on the bottom belt. At the #48 wall track spur, the track extends through two (2) airlock doors and continues under the belt to just outby #49 wall. A dolly, with approximately 600 feet of laced belt that would be added during the belt installation/advancement, was positioned at the end of this track.

Outby at #48 wall, Mr. Gillies and Mr. Nething applied a belt clamp with a 2-ton chain hoist to the bottom belt on the outby side of the dolly and notified Mr. Jones. The miners began the process of breaking down the tailpiece which was attached to the feeder by chains. Mr. Potts was assigned to run the feeder, which was his normal job during belt moves. Mr. Potts trammed the feeder inby first so that the belt crew could remove the wooden supports that braced the tailpiece against movement. The wooden supports were then placed on the tailpiece to be used at the new tailpiece and feeder location. Mr. Potts then trammed the feeder outby approximately 10 feet, allowing the tension of the belt to move the tailpiece. Once the tension was relieved, the tailpiece would no longer move without being pushed. A belt clamp with a 2-ton chain hoist was applied and tightened on the bottom belt on the inby side of the dolly at #48 wall in order to obtain additional slack in the bottom belt. This allowed the bottom belt to lay on top of the laced belt. The bottom belt was then cut at this location.

The feeder was lowered, and the tailpiece was pushed outby until the belt started to sag. Mr. Jones was concerned about the position of the belt splice due to the slack in the belt. Mr. Jones decided to attach two (2) belt grips to the bottom belt and two (2) 1-ton chain hoists to the hanging belt structure outby the splice on the solid and track side. The hoists and grips were tightened to hold the splice in place. The tailpiece was pushed outby. The location of the splice pin was now in the middle of the front frame leg of the tailpiece and could not be accessed. The tailpiece was pushed outby approximately 8-10 additional inches to gain access to the splice pin.

Mr. Potts attempted to remove the belt splice pin without success. Mr. Hammerquist, who was walking towards the tailpiece with Mr. Scott and Mr. Goddard, crossed to the solid side of the belt attaching a pair of channel locks to the splice pin. He began pulling it while Mr. Scott was tapping on the pin with a hammer from the track side. After the pin could not be hit anymore, Mr. Starkey, who had removed his mining belt and was sitting on the bottom belt with Mr. Stephenson, positioned himself so that he could strike the channel locks Mr. Hammerquist was holding in an attempt to remove the splice pin. In doing so, this placed him under the outby support beam of the tailpiece while the belt was on the mine floor.

Mr. Jones, standing next to the tail observed material under the belt in the tailpiece. He surmised that the belt was on a bind preventing removal of the splice pin. They stopped the attempt of removing the pin to clean the material. Mr. Hammerquist laid on the mine floor on the solid side next to the tailpiece and began cleaning with a 4-foot drill steel. Mr. Stephenson exited the belt to retrieve a 6-foot bolt from the track. Mr. Scott, standing near Mr. Hammerquist, moved outby to where the chain hoists had been attached.

Mr. Stephenson returned with a 6-foot bolt, using it to apply pressure on the bottom belt. At this time, the miners near the scene heard a loud noise and saw suspended dust in the air. The equipment being used to hold the belt splice in position had failed. Mr. Starkey was pinned between the belt and an outby support beam of the tailpiece.

Miners immediately began freeing Mr. Starkey, preparing for transport and calling outside for help. Mr. Bradshaw and Mr. Jones checked for a pulse on the neck and wrist. No pulse was detected. Mr. Starkey was transported by stretcher to the awaiting personnel carrier and taken to Cameron portal bottom. Mr. Starkey was transported to the surface, via the elevator, while CPR was administered.

Once on the surface, Mr. Starkey was transferred to the care of Marshall County EMS at 4:49 p.m. He was transported to Reynolds Memorial Hospital and was received at 5:39 p.m. The victim was pronounced deceased by Dr. Aulick at 6:01 p.m.

**FINDINGS OF FACTS**

1. Raymond L. Starkey Jr. received a West Virginia Underground Miner Certification, #1-24008, on March 4, 2019.
2. Mr. Starkey received experience miner training from Marshall County Coal Company on March 26, 2019.
3. Mr. Starkey's job classification was general inside laborer.
4. The Marshall County Mine produces coal on all three (3) shifts and rotates shifts every week.
5. Belt installations/advancements are conducted on any shift when necessary.
6. A written procedure was presented to the West Virginia Office of Miners' Health Safety and Training dated April 19, 2019. This procedure was established specifically for the Cameron Corridor 72 inch belt installation/advancement.
7. A conveyor belt take-up system was not being used at the time of the accident on the Cameron Corridor continuous miner section belt.
8. The Cameron Corridor section conveyor belt was approximately 9,352 feet in length.
9. The conveyor belt is 72 inches in width, 1 inch thick and weighs 32 pounds per linear foot.
10. The conveyor belt structure is suspended by chains from belt hangers installed in the mine roof.
11. Based upon interviews the assembly of the Cameron Corridor belt structure was performed beneath the operating belt which was less than seven (7) feet in height, exposing miners to moving parts of machinery.
12. Three hundred feet of belt structure in the Cameron Corridor was preassembled underneath the hanging section belt located outby the conveyor belt tailpiece.
13. This was a typical two-block conveyor belt installation/advancement for the Cameron Corridor. Blocks are approximately 150-foot centers.
14. The entry height at the accident scene was measured at 8 feet 11 inches, entry width was measured at 16 feet and the bottom was wet and muddy.
15. On the belt between #48 and #49 wall, the Harrington Hoists, Inc., 2-ton chain hoists (product code LB020) attached to the belt clamps holding the bottom belt in position to be cut, had non-functional or missing safety latches on the hooks. The hooks were bent on two (2) of the four (4) chain hoists.
16. The Redwing Company, Inc., Model 78-C belt grippers (rated with a pull capacity of 2,000 lbs.) became detached on the track side outby end of the Master Machine Co. Inc., 72" Low Pro Belt Tail, tailpiece. The Harrington Hoists, Inc., 1-ton chain hoist's (product code LB010) chain broke. During the investigation of the products by MSHA Approval and Certification Center(A&CC) the products were overloaded to recommended manufacturers rated capacity. The damage likely was a result of overload and combined shock loading during the accident. This combination resulted in the bottom belt moving up and outby pinning Mr. Starkey.

17. The company #6 Polaris battery powered EMU, to be used as the readily available ride on the Cameron Corridor miner section, was inoperable at time of the accident.
18. The distance from the accident scene to the end of the Cameron Corridor track was approximately 1,315 feet. The distance from the Cameron Corridor Section end of track to the Cameron Portal elevator is approximately 11,688 feet.
19. No documentation was found that Mr. Starkey had been properly trained for this task.
20. The IWT tracking system failed to record the location of Mr. Stephenson, Mr. Bradshaw, Mr. Smitley and Mr. Starkey due to insufficient battery voltage at the time of the accident.

### **CONCLUSION**

Mr. Starkey was fatally injured while assisting with the installation/advancement of the Cameron Corridor continuous miner section conveyor belt on December 23, 2019, at approximately 4:15 p.m. The victim was positioned between the bottom belt and the outby support beam of the tailpiece in an attempt to remove a belt splice pin. There was a failure of the equipment that restrained the bottom belt, which resulted in a release of stored energy in the belt. This caused a sudden, unexpected violent upward and outward movement of the bottom belt that pinned the victim.



### **ENFORCEMENT ACTION**

A non-assessed order was issued in accordance with West Virginia Code, Chapter 22A, Article 2, Section 68 to preserve evidence until an investigation by the West Virginia Office of Miners' Health, Safety and Training is completed.

#### **§22A-2-49(b). Safeguards for mechanical equipment.**

Belt, chain or rope drives and the moving parts of machinery which are within seven feet of the floor, ground or platform level, unless isolated, shall be guarded adequately was not complied with on the Cameron Corridor belt line. In testimony, during the investigation of a fatality, it was revealed that mine personnel were pre-building belt structure sections while the belt was in operation without guarding for protection as the area under the bottom belt has less than seven feet of clearance.

#### **§22A-2-37(a). Haulage roads and equipment; shelter holes; prohibited practices; signals; inspection.**

Where transportation of personnel is exclusively by rail, track shall be maintained to within 1,500 feet of the nearest working face: Provided, that in any case where such track is maintained to within a distance of more than 500 feet and not more than 1,500 feet of the nearest working face, a self-propelled, rubber-tired vehicle capable of transporting an injured worker shall be readily available was not complied with on the Cameron Corridor continuous miner section. The company #6 Polaris EMU, designated as the readily available ride, was inoperable at the time of the accident. From the formal interviews, testimony arose that mine personnel attempting to secure the readily available ride for transport found that the EMU would not tram. In addition, on a subsequent inspection on 12/31/2019, the readily available ride was found not operational and Violation #56 of Case #322-0093-2019 was issued.

#### **§22A-2-55(i)(1) Protective equipment and clothing.**

A wireless tracking device approved by the director and provided by the operator shall be worn by each person underground. In the event of an accident or other emergency, the tracking device shall, at a minimum, be capable of providing real-time monitoring of the physical location of each person underground was not complied with on the Cameron Corridor continuous miner section. In the course of the investigation of a fatality at this mine, it was found that four mine personnel at the scene of the accident were not being tracked by the IWT radios/trackers due to insufficient battery voltage.

#### **§36-18-4.1. Responsibility for Care and Maintenance of Equipment.**

Mine operators shall maintain equipment in safe operating condition. Equipment operators shall exercise reasonable care in the operation of the equipment entrusted to them was not complied with on the Cameron Corridor section. As the result of an investigation of a fatality at this mine, evidence obtained during the investigation of the products by MSHA (A&CC) showed that loads applied exceeded the recommended manufacturers rated capacities of the Harrington Hoists, Inc. 1-ton chain hoists as well as Redwing belt grippers, causing failure. The failure of the equipment used, and the significant tension caused by the weight of the belt resulted in a sudden release of the belt, fatally pinning the victim. This is a violation of a safety rule and is of a serious nature involving a fatality.

**RECOMMENDATIONS****Marshall County Coal Company**

Marshall County Mine – Cameron Portal  
57 Goshorn Woods Road  
Cameron, WV 26033  
Office: (304) 686-4300  
mshcc.correspondence@coalsource.com

February 6, 2020

Mr. Ed Peddicord, Inspector At Large  
State of West Virginia  
Office of Miners' Health, Safety, and Training  
Suite 101-14 Commerce Drive  
Westover, West Virginia 26501

## Action Plan #4c

Dear Mr. Peddicord,

The Marshall County Coal Company, Marshall County Mine, U00003383A, is respectfully submitting the following action plan in order to terminate the Order issued by Bill Coen on 12/23/2019. The items outlined below are a step by step plan describing how the Cameron Corridor will complete a belt move moving forward. Please note that the steps outlined below are specific to a 72-inch belt move in the Cameron Corridor employing prebuilt structure.

Prior to beginning, a pre-op will be done on all components that are to be used (Ropes/Sheaves/Pins/Chains and connections)

- Components shall be used in accordance with manufacture's recommendations.
  - Components shall be examined prior to use.
  - Defective or damaged components shall be removed from service.
1. Once mining is complete, the feeder will be cleaned
  2. A splice will be spotted on the bottom belt at a minimum of one hundred feet (100') outby the tail piece.
  3. The belt drive will be properly locked and tagged out of service. As of 2/2/2020 the permanent drive at 8-wall is in service and the take-up is on line.
  4. The take-up tension will be released so that all the tension is off and the winch rope is laying down with the brake on the winch released. Communication will be established from the take-up to the tailpiece.
  5. The feeder and tailpiece will be broken down. The feeder will be trammed off the tailpiece and the tail will be pulled forward allowing the tail anchors to release. The outby belt clamps in the belt hole will be installed at this time. Once the tail anchors are removed the feeder will push the tailpiece outby removing any remaining tension in the belt.
  6. The section feeder will push the broken-down tailpiece outby to the end of the previously installed hanging structure. Additional structure may be removed if more slack is needed.
  7. The belt will be split at the leading edge of the previously spotted splice.
  8. At the belt hole, the inby belt clamp will be installed and the belt will be cut so that the lace, or rolled, rubber for belt advancement will be spliced into the system.
  9. The tailpiece will be hooked with an "f-bar chain" (5/8" Grade 80), or equivalent, to the pre-built structure belt sled so that it pulls the sled and the structure at the same time. All F-bar chains will be rated for the amount of weight of the belt structure.
  10. The yellow water line is to be unhooked from the 8" water line and placed on the tailpiece.

11. The feeder is to be trammed inby pulling the structure and sled to the stop point (UNTIL THE OUTBY END OF THE STRUCTURE ON THE GROUND MATCHES UP WITH THE INBY END OF THE HANGING STRUCTURE) or to the next belt clip if proper belt clip spacing has not been maintained.
12. Once the structure is in place, chain falls are to be hung on chain hooks and the structure is to be raised from the outby end working inby.
13. Once the structure has been raised, the tailpiece is to be pulled inby to the stop point.
14. A pull rope will be threaded on the bottom rollers from the previously installed splice to the tailpiece. This will be the first pull of belt which will advance the belting onto the bottom rollers up to the tailpiece. There will be a piece of equipment staged inby the feeder on the belt line to pull this rope.
15. The pull rope will then be run around the tail roller and outby so as to pull the belting through the tailpiece and onto the top rollers to the outby end of the top belt. The pull rope will be run through a sheave wheel hanging between belt clips outby the end of the top belt so as to allow the belt to be sheaved far enough outby to be pinned together.
16. The top belt is to be spliced together and slack is to be checked.
17. If necessary, the new bottom belt is to be cut in the belt hole and necessary splices are to be installed in order to pin the belt together. If there is minimal belt remaining we are to pull this belt into the system when the take-up is tightened up to run.
18. Once the belt is whole and all structure has been installed the belt is to be tightened with the take-up and the drive is to be set up to run.
19. All structure is to be lined and levelled as needed.
20. The yellow water line is to be stretched out, flushed, and plumbed in at the tailpiece.
21. The belt is to be run and trained as needed. All personnel will be in a safe location away from the tailpiece and feeder before the belt is started.
22. A member of mine management holding a West Virginia Mine Foreman or Assistant Mine Foreman certification shall directly supervise the implementation of this plan. A member of mine management holding a West Virginia Mine Foreman or Assistant Mine Foreman certification shall review the plan with all miners involved prior to the belt installation/advancement. A record shall be maintained of the training. Any changes or modifications will be submitted and reviewed by the Region One District Inspector-at-Large for acceptance.
23. The approved plan will be entered into the Comprehensive Mine Safety Program.

Thank you for your consideration. Please contact this office if you have any questions or comments.

Regards,

*Ryan Carman*

Ryan Carman  
Safety Director  
Phone (304) 686-4308  
Cell (740) 827-4379

### **ACKNOWLEDGEMENT**

The West Virginia Office of Miners' Health, Safety and Training gratefully acknowledges the cooperation of the management and employees of Marshall County Coal Company, Murray Energy Corporation, the Mine Safety and Health Administration and the United Mine Workers of America during this investigation.

**MINE INFORMATION**

COMPANY NAME: Marshall County Coal Company

MINE NAME: Marshall County Mine

W.V. PERMIT NUMBER: U00003383A          MSHA PERMIT NUMBER:46-01437

ADDRESS: 57 Goshorn Ridge Road, Cameron, W.V. 26033

COUNTY: Marshall          PHONE NUMBER: 304-686-4300

DATE STATE PERMIT ISSUED: 01/04/2016          WORKING STATUS: Active

LOCATION: Cameron Portal

UNION: Yes          NON-UNION:

DAILY PRODUCTION: 48,000 tons          ANNUAL PRODUCTION TO DATE: 11,588,113 tons

TOTAL EMPLOYEES: 864          NUMBER OF SHIFTS: 3

NUMBER OF PRODUCTION SHIFTS: 3

COAL SEAM NAME AND THICKNESS: Pittsburgh No. 8          60-inches

ACCIDENT RATE: 9.997          LOST TIME ACCIDENTS: 100 ytd

TYPE OF HAULAGE: Belt

W.V. MHS&T INSPECTORS: William Coen and Ronald Sheets

DATE OF LAST INSPECTION: December 23, 2019

NOTIFIED BY: Mine and Industrial Accident Rapid Response System

NOTIFICATION TIME: DECEMBER 23, 2019 at 4:28 p.m.

CMSP-CONTACT PERSON: Ryan Carman