

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
OFFICE OF THE ADMINISTRATOR
COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION
UNDERGROUND COAL MINE INUNDATION (BLACKDAMP)
Moss No. 3 Portal A Mine (I. D. 44-01642)
Clinchfield Coal Company
Duty, Dickenson County, Virginia

April 4, 1978

Originating Office - Mine Safety and Health Administration
4015 Wilson Blvd., Arlington, Virginia 22203

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Abstract

This report is based on an investigation made pursuant to the Federal Mine Safety and Health Amendments Act of 1977 (83 Stat. 742 as amended by 91 Stat. 1290).

At approximately 12:30 p.m., on Tuesday, April 4, 1978, the single entry Drainway on Fryingpan Creek of the Moss No. 3 Portal A Mine, Clinchfield Coal Company, Duty, Dickenson County, Virginia, was inundated by an inrush of blackdamp (oxygen deficient air). The Drainway that was being advanced by a continuous mining machine cut into a mined out inaccessible abandoned area of the same mine. Two of the four men that were in the face area when the Drainway entry cut through were killed by the blackdamp; the other two men (one dragged the other) retreated to the surface and survived. Three other men were killed by the blackdamp while attempting to rescue the two missing men. Two other men were overcome by the blackdamp while attempting rescue efforts and had to be assisted to the surface; and another man involved in rescue attempts reportedly came out of the Drainway unassisted at approximately 1:30 p.m., after having been underground for about 40 minutes.

The names of the victims, their ages, occupations, and mining experience are listed in Appendix A.

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PART I

INUNDATION (BLACKDAMP) AND RECOVERY

OPERATIONS

The Moss No. 3 Mine, Clinchfield Coal Company, located near Duty, Dickenson County, Virginia, was opened into the Thick Tiller Coalbed on October 11, 1957. Clinchfield Coal Company, a subsidiary of The Pittston Company Coal Group, is the operating company of the Moss No. 3 Mine. At the time of this investigation, corporate and supervisory officials were as follows:

The Pittston Company Coal Group

G. R. Swanson	President
J. E. Nypaver	Vice-President, Operations
J. W. Crawford	Director of Health and Safety

Clinchfield Coal Company

C. M. Bailes	Vice-President
Henry Kiser	General Manager
W. B. Couch	Division Manager
M. L. West	Manager, Safety Division
Strickler Mullins	Superintendent, Moss No. 3 Mine
Robert Yokum	Mine Foreman, Moss No. 3 mine

The Moss No. 3 mine consists of Portal A, Portal B, Portal C, Portal D and the most recent opening, Portal A-2. The mine area associated with this accident was developed from the Moss No. 3 Portal A mine. See Appendix B for the general information for the Moss No. 3 Mine.

Mining Conditions Prior to Inundation

The main entries of the Moss No. 3 Portal A mine were developed in a southwesterly direction for a distance of approximately 12,300 feet. The coalbed dips northwest about 1.5 percent for approximately 8,600 feet from an elevation of about 1,600 feet at the portal entry to an elevation of 1,465 feet. The coalbed then rises about 0.7 percent for a distance of approximately 7,300 feet to the northwest property line. According to company estimates, 23,000,000 gallons of water enter the mine each 24 hours and 6,000,000 gallons per day were pumped from the mine. During development mining, the water was removed with pumps. However, as

areas were second mined, the pumps had to be removed which resulted in water accumulations at the lower elevations. At the time of the accident, mining in the areas of the mine below the 1,510 foot elevation had been completed and water had accumulated to the 1,495 foot elevation. See mine map in Appendix J. Parts of the 1 Right off 1 Right off 11 Right section along the northwest mine boundary and the 5 Right off 1 Right off the A Mains section, along the northeast boundary, were above the 1,495 foot elevation. These areas were not flooded but the rising water sealed the 1 Right abandoned area from the rest of the mine and this abandoned area became pressurized by the encroachment of the water.

The new Moss No. 3 Portal A-2 mine (see mine map, Appendix J) intersected the abandoned 5 Right section of the Moss No. 3 Portal A mine at the 1,504 foot elevation. The rising water in the abandoned areas of the Moss No. 3 Portal A mine presented a problem of eventual flooding of some of the active areas of the new Moss No. 3 Portal A-2 mine.

Near the first of March 1978, M. L. West, Manager, Safety Division, Clinchfield Coal Company, met with MSHA officials, Ray G. Ross, Frank C. Mann, Willis D. Ison, and James V. Bowman at Norton, Virginia, and discussed plans that would prevent flooding of the new Moss No. 3 Portal A-2 mine. The plan discussed at this meeting was to drill an 8-inch diameter horizontal hole from the surface into the abandoned 1 Right area, a distance of approximately 265 feet. This 8-inch borehole would permit monitoring of the atmosphere in the abandoned area and would serve as a centerline for an entry which would be driven with a continuous mining machine. According to the testimony of W. B. Couch, Division Manager, mine management considered enlarging the 8-inch diameter borehole to 24 or 30 inches; however, this part of the plan was not discussed at this meeting.

Shortly after the meeting with MSHA officials, the company employed a contractor to drill the 8-inch borehole. The borehole was drilled a distance of approximately 5 feet and the plan was abandoned due to the inability of the contractor to control the direction of the drill. West informed MSHA by telephone of the inability of the contractor to drill the 8-inch borehole, and received permission from MSHA to proceed with the plan to develop the Drainway entry with a continuous mining machine.

On March 17, 1978, West submitted a plan to MSHA for developing the Drainway entry. The plan stipulated that the entry would be developed by a continuous mining machine from the surface into an abandoned area a distance of about 225 feet; that adequate ventilation will be provided by a fan and venti-

lation tubing; that the roof will be supported with either conventional roof bolts or resin grouted rods and supplemented with timbers and/or crossbars where needed. The plan stated that, according to surveys, the abandoned area near the connection point did not contain water. Although the plan made no reference to the possibilities that the abandoned area might contain methane and/or blackdamp, it did provide that test drill holes will be kept 20 feet in advance of the face. The plan was received in the MSHA district office on March 21, 1978, and approved by the District Manager on March 24, 1978. See Appendix G Plan No. 1.

The development of the Drainway entry with a continuous mining machine was begun on Tuesday, March 28, 1978. Mining was done on three shifts each day. During the afternoon shift, (4:00 p.m. to midnight) on Friday, March 31, the continuous mining machine developed a mechanical problem and had to be brought to the surface for repair. The Drainway entry had been driven approximately 191 feet. At this time the first test boreholes were drilled.

On Monday morning, April 3, 1978, a second continuous mining machine was brought from the mine yard to the Drainway site to replace the malfunctioning machine. Glen Beverly, Ambrose Conley and Lawrence Shelby (victim), representatives from the National Mine Service Company, arrived at the Drainway site to repair the continuous mining machine.

At approximately 1:30 p.m., the same day, Ronald W. Franks and Vearle Hileman, MSHA District 5 personnel, arrived at the Drainway site. They had completed inspection duties at another mine and were enroute to their office in Norton, Virginia, via a mountain road (shortcut) which took them by the Drainway site. Although the Drainway entry was not part of their area of assignment, they decided to stop and investigate what appeared to them to be a new mine opening. According to Franks and Hileman there were two continuous mining machines on the surface. One machine was being repaired and the other was being serviced. No work was being done underground and the ventilation fan was not operating.

Franks and Hileman discussed the Drainway project with Henry Kiser, Manager of Mines, and Pete Capelli, Assistant to the General Manager. They were advised by Capelli that the company was concerned about encountering methane when the Drainway entry holed through into the abandoned area and that test boreholes were being drilled. The subject of blackdamp was not discussed by MSHA and company officials. The ventilation fan was started and Franks and Hileman checked the air movement in the drift opening and shortly afterwards left the mine site.

At the end of the midnight to 8:00 a.m. shift on Tuesday, April 4, 1978, the Drainway entry had been developed to within approximately 13 feet of the abandoned workings. The time remaining on the third shift did not permit the last advance of the Drainway to be roof bolted before the dayshift crew reported for work. See Appendix F, Photo 2. According to the preshift examination record book for the 8:00 a.m. shift at the Drainway entry, no unsafe conditions were found and 5,400 cubic feet a minute of air was measured at the inby end of the line curtain.

The Inundation

The Drainway crew consisting of Charles Breeding, continuous mining machine operator, Earl Castle Jr., shuttle car operator, William Arden, roof-bolting machine operator, Jack Nowlin, roof-bolting machine operator helper, and Marion Johnson, maintenance foreman, supervised by Richard Carson, Superintendent, began their work duties at 8:00 a.m., Tuesday, April 4, 1978.

Also Glen Beverly, Ambrose Conley and Lawrence Shelby, representatives from the National Mine Service Company, arrived at the Drainway site and began making repairs to the continuous mining machine that was located on the surface about 150 feet from the drift mouth.

At the start of the shift the crew trammed the continuous mining machine from the face of the Drainway entry to the surface. The roof-bolting machine was trammed from the surface to the face and the place was bolted. Strickler Mullins, Superintendent, arrived at the Drainway site about 9:30 a.m. He had been at the company shop having some shorter sections of drill steel augers made which would eliminate the whipping action that was occurring when test boreholes were drilled with the 10-foot auger sections. Mullins met Carson in the Drainway entry where they examined the face area for test boreholes that were drilled on the previous shift. They found a test borehole in the center of the entry, about 2 feet above the floor, and 8 1/2 feet deep. Breeding and Earl Castle Jr. extended the 8 1/2 foot borehole to a depth of approximately 13 feet where it penetrated the abandoned 1 Right area of the Moss No. 3, Portal A mine. The borehole was cleaned by allowing the drill auger to rotate freely as the drill augers were removed from the borehole. Air was flowing from the gob area into the Drainway. Breeding and Castle stated it blew dust 3 or 4 feet into the Drainway entry.

