

COAL NONFATAL

UNITED STATES

DEPARTMENT OF LABOR

MINE SAFETY AND HEALTH ADMINISTRATION

OFFICE OF THE ADMINISTRATOR

COAL MINE SAFETY AND HEALTH

FINAL REPORT OF MAJOR COAL MINE

FIRE DISASTER AND RECOVERY

OPERATIONS

Blacksville No. 1 Mine
Consolidation Coal Company
Blacksville Operations

July 22, 1972

By

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ABSTRACT

This report is based on an investigation made pursuant to the Federal Coal Mine Health and Safety Act of 1969 (83 Stat. 742). This report refers to the enforcement agency as the Mine Safety and Health Administration (MSHA), Department of Labor, which reflects the changes brought about by the Federal Mine Safety and Health Amendments Act of 1977.

This report supplements and concludes the preliminary report of a mine fire disaster that occurred on July 22, 1972, in the Blacksville No. 1 Mine, Consolidation Coal Company, Blacksville Division, Blacksville, Monogalia County, West Virginia. The name of the company has since been changed to Blacksville No. 1 Mine, Blacksville Operations, Consolidation Coal Company.

A mine fire occurred about 7:30 p.m., Saturday, July 22, 1972, along the 3 North Main track haulageway, between the junctions of the A-1 and A-2 sections. The fire started when a continuous mining machine being transported along the 3 North Main track haulageway contacted the energized trolley and/or trolley feeder wires. At the time of the occurrence, 43 men were in the mine. Except for a foreman and eight employees working inby the fire area, all workmen in the mine escaped without incident via the service shaft portal.

Attempts to control and extinguish the fire were unsuccessful and the mine was sealed from the surface. The foreman and eight workmen engaged in miscellaneous duties inby the fire were entombed in the mine. The names of the victims, their ages, social security numbers, occupations and experience are listed in Appendix A of the preliminary report which is included as a part of this report (See Appendix 1).

The mine was reopened January 3, 1973, and the bodies of the nine victims recovered. However, before the fire area could be totally recovered, the fire rekindled and the area had to be resealed.

The Mining Enforcement and Safety Administration, now the Mine Safety and Health Administration (MSHA), was informed by Adler E. Spottee, Vice President, Blacksville Operations, that the company does not plan to open and recover the sealed area at the present time. The area was subjected to extreme heat and ignitions while sealed from July 25, 1972, until January 2, 1973, and massive roof falls have occurred. A

copy of the correspondence received from Mr. Spottee is appended herewith. (See Appendix II). The Mine Safety and Health Administration, aware of the effects of fire in the immediate strata overlying the Pittsburgh coalbed, has not objected to the company's decision.

The company's decision not to reopen the sealed fire area precludes any further investigation by MSHA.

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PART I

GENERAL INFORMATION

The Blacksville No. 1 Mine opened July 28, 1968, is located 1.2 miles east of Blacksville, Monongalia County, West Virginia, off State Route 7. The names of the operating officials are:

James L. Magro	Vice President
Donzel Ammons	General Superintendent
Robert Phillips	Superintendent
Charles E. Bane	Safety Director

Mining Methods, Conditions and Equipment

A description of mining methods, conditions, equipment, story of the fire fighting operations, rescue and recovery operations, and sealing of the mine on the surface are listed in the preliminary report. (See Appendix I).

PART II

Activities During the Period the Mine was Sealed

Employees and representatives of the Blacksville Division, Consolidation Coal Company, and representatives of the Christopher Coal Company and Mountaineer Coal Company, Division of Consolidation Coal Company, United Mine Workers of America, West Virginia Department of Mines, the Bureau of Mines, (MSHA) and fourteen mine rescue teams from the three divisions of the Consolidation Coal Company and from Eastern Associated Coal Corporation, attempted to control the fire and rescue the entrapped men until 1:10 p.m., July 24, 1972, when the volume percent of methane in the right and left return airways increased to 3.0 and 3.8 percent respectively. All persons were withdrawn to the 1 East Junction, outby the fire. The ventilation of the fire area was disrupted by falls of roof resulting from the fire. The increase in combustible gases in the return airways and the occurrence of an explosion, inby the fire, at 2:42 p.m., prompted removal of all persons from the underground areas of the mine, and sealing of all mine openings on the surface. The story of the fire and sealing operations is included in Part I, (Appendix I), of the report.

In the meantime, the drilling of a 5-5/8 inch borehole from the surface into the A-3 section, 400 feet outby the face, which was started at 7:00 p.m., Sunday, July 23, 1972, was continued. The borehole was completed at 3:45 p.m., Monday, July 24, 1972. A two-inch diameter two-way communications probe was lowered into the hole and monitoring of the mine area was done without success from 1:00 a.m. to 2:00 a.m., Tuesday, July 25, 1972. The communications probe was removed and a geophone was lowered into the mine. During the monitoring period, only the sound of water was heard. No seismic events were recorded during this period.

During construction of the seals over the portal, skip, and Renner shafts and on the borehole into the A-3 section, provisions were provided to permit sampling of the sealed mine atmosphere. When the seals were completed, all persons were withdrawn to a safe distance from the shaft areas.

Inasmuch as the mine was liberating 6,000,000 cubic feet of methane in a 24-hour period it was the consensus of the four agencies that the gases in the sealed mine would be above the explosive range within 72 hours. Therefore, no one was permitted near the seals during this period. Daily

sampling of the sealed mine atmosphere was initiated and continued for one week until a methane-oxygen trend could be established. After one week, the methane content of the sealed mine atmosphere exceeded 39 percent, the oxygen content was below 6.3 percent, and the sampling interval was extended. Two boreholes, one just outby and another inby the origin of the fire was drilled during August and September, 1972, respectively, and provisions for collecting samples from the mine were installed. All the samples of the mine atmosphere collected were analyzed at the MSHA laboratories at Mt. Hope, West Virginia. The analytical results of samples collected during the time the mine was sealed are listed on Table I (See Appendix III).

Mine management developed plans for reentering and recovering the mine and requested a meeting of representatives from the United Mine Workers of America, West Virginia Department of Mines, and the Mining Enforcement and Safety Administration (MSHA). The meeting was held on December 14, 1972, with the following persons in attendance:

Consolidation Coal Company

Adler E. Spottee	President, Blacksville Division
James L. Magro	Vice President, Blacksville Division
C. V. Zickafoose	Safety Director, Blacksville Division
Harold Suter	Vice President, Consolidation Coal Co
C. William Parisi	Corporate Safety Director, Consolidation Coal Co.
W. T. Simon	Safety Director, Christopher Division, Consolidation Coal Co.

United Mine Workers of America

L. Pnakovich	Vice President
Kermit Wells	Safety Director
Charles Tarasuk	Safety Division, Assistant to Director
Donald Poland	Safety Coordinator, UMWA., District 31
Richard Green	Chairman, Safety Committee, UMWA, Local 1588
Stanley Osecky	Member, Safety Committee, UMWA, Local 1588
Ronnie Statler	Member, Safety Committee, UMWA, Local 1588

West Virginia Department of Mines

John Ashcraft	Director
Leslie C. Ryan	Inspector-at-large, Northern Division
Walter O. Miller	Assistant Inspector-at-large, Division

Mining Enforcement and Safety Administration

John W. Crawford	Assistant Administrator
James D. Micheal	District Manager, District 3
W. R. Park	District Manager, District 4
J. W. Krese	District Manager, District 4
Joseph Marshalek	Assist. District Manager, District 3
Harrison C. Summers	Supervisory Training Instructor

After a discussion of the reopening and recovery plan, and a review of the analyses of samples collected from the sealed mine, a target date of 8:00 a.m., Tuesday, January 2, 1973, was agreed to by the four agencies for removal of the mine seals. Additional air samples would be collected and analyzed prior to opening. The analysis of samples collected December 5, 1972 are as follows:

	<u>Carbon Dioxide</u>	<u>Oxygen</u>	<u>Methane</u>	<u>Carbon Monoxide</u>	<u>Nitrogen</u>
Shaft Portal Intake	10.8	0.17	85.87	.0015	4.03
Portal Shaft Return	9.63	0.5	86.10	.0016	3.99
Skip Shaft	10.27	0.10	84.89	.0016	4.58
Renner Intake	9.24	0.10	86.13	.0015	4.45
Renner Return	9.63	0.10	85.76	.0020	4.42
Section borehole A-3	11.44	0.12	83.95	.0016	4.29
No. 1 Nitrogen	12.55	0.10	82.8	.0016	4.36
No. 2 Nitrogen	12.84	0.10	82.29	.0018	4.59

The analyses of the samples of the atmosphere in the sealed area indicated conditions were favorable for reentry and it was agreed by the representatives of the four agencies that removal of the mine seals would be started on the target date established during the December 14 meeting.

The mine entry and recovery plan, agreed to by representatives from the four agencies, provided for a systematic removal of the mine seals, starting of the mine fans, and the ventilation of the entire mine. When the methane content of the air exhausting from the mine stabilized at the lowest attainable level, which had to be below an established maximum value of 2 percent, the mine would be entered via the portal service shaft. Representatives from the four agencies would proceed on foot to the fire area. The fire area would be examined and provisions made to provide water at the fire area, should it be needed. The remainder of the mine would then be examined. All examinations and recovery outby the 3 north mains and throughout the remainder of the mine was to be made in a respirable atmosphere. Pockets of methane encountered would be removed by directing ventilation to the area.

A communication center was established in the mine superintendent's office and communications established to each location where seals were to be removed. During removal of the seals, all telephones would be disconnected except those more than 500 feet from a mine opening. Remote starting controls were installed for the mine fans, at the Portal and Renner shafts, and auxiliary ventilation fans and tubing were provided to ventilate the fan housings. The fans would be monitored and the exhaust air sampled continuously for methane and carbon monoxide.

Nine trained mine rescue teams from the Blacksville Division and other Consolidation Coal Company Divisions were selected to participate in the recovery operations. Equipment, including nonsparking tools, and supplies were provided.

All persons who were to participate in the recovery operations were briefed in the recovery plan and procedures.

PART III

Unsealing of the Mine and Recovery Operations

At 8:00 a.m., January 2, 1973, removal of the concrete seals on the Renner and Portal intake and return compartments, and on the skip shaft was started. At 5:50 p.m., when the seals over the Renner and Portal shaft had been removed, the representatives of the four agencies agreed to start the portal fan. At 6:30 p.m., when all persons had been removed from the portal area, the fan was started by remote control. The Renner fan was similarly started at 11:30 p.m. the same day. The mine return air was monitored continuously with hand-held instruments and air samples were collected. The air samples were analyzed at the mine using a portable Orsat. When a series of samples collected indicated a favorable mine atmosphere, representatives of the United Mine Workers of America, Company, State and MESA agreed to enter the mine. The mine elevator was examined and operated up and down several times to assure it was in proper operating condition. About 8:21 a.m., January 3, 1973, 11 men including a mine rescue team carrying self-contained oxygen breathing apparatus, entered the mine via the portal shaft. The men explored the track entry to the fire area. Exploration of entries other than the track entry was not done at this time in order that the men could reach the fire area as soon as possible. The exploration crew arrived at the fire area at approximately 9:30 a.m., explored the fire area and found no evidence of an active fire. They found several stoppings knocked out by forces from an explosion that occurred during firefighting operations during July, 1972. When the investigation crew reported conditions favorable in the fire area, other crews were lowered into the mine to thoroughly explore all areas of the mine. The explorations and recovery was done in fresh air and under direction from the control center via telephone. Each exploration crew carried a portable telephone and tapped into the mine telephone line and reported to the communication center periodically. Representatives from the four agencies were at the communication center at all times while persons were underground. When all areas of the mine, except inby the 3 north fire area, had been examined, routine patrols of the areas were made by certified persons accompanied by a representative, or representatives from participating agencies. In the meantime, exploration and recovery work continued in the fire area. The return airways immediately outby the fire area and the main fans were monitored continuously by MESA (MSHA) personnel for methane and carbon monoxide. All data was telephoned to the communication center where a complete log of the operations was being kept.

At 6:10 p.m., another crew, relieving the first crew, continued the exploration in the 3 north area. The exploration was accomplished by advancing ventilation controls and ventilating the areas during advance. Although the exploration and recovery was done without the use of self-contained oxygen breathing apparatus, equipped mine rescue teams accompanied the exploration crews while working inby the fire area.

The first body was located in the No. 8 heading, 3 north mains, between Nos. 13 and 14 crosscuts, about 50 feet inby the junction with No. 1 entry, A-2 section. Shortly thereafter, about 7:21 p.m., three more bodies were located in the same entry, 100 and 150 feet respectively, inby the location of the first body. The No. 8 heading was a designated return escapeway. (See map, Appendix IV). Self-rescuers were found attached to the faces of the four victims. The men apparently traveled the escapeway from the face area of the A-3 section where they were working when the fire occurred. The four bodies were removed to the surface by 9:30 p.m.

About 8:30 p.m., evidence of heat was discovered in the fallen roof material in the No. 7 heading, 3 north mains, just inby the origin of the fire. Water was applied to the heated area and tests for carbon monoxide were made regularly; the area was monitored continuously. Meanwhile, exploration of the area inby the fire continued and at 12:44 a.m., January 4, 1973, a crew exploring in the A-2 section discovered the fifth and sixth bodies along the belt entry, near the No. 13 crosscut. The Nos. seven, eight and nine bodies were located at 1:10, 4:55 and 6:25 p.m., along the same entry. The bodies were covered by fallen top coal. The ninth body was brought to the surface by 7:50 p.m.

Continuous monitoring of the fire area was maintained while crews continued exploring the 3 north area. About 6:03 p.m., January 4, 1973, 0.001 percent carbon monoxide was detected at the No. 10 crosscut, No. 7 heading, 3 north mains. Explorations inby the fire were discontinued and all persons were withdrawn to outby the fire area.

At this time, representatives of the four participating agencies agreed that it may become necessary to seal around the fire area. Management developed a plan for sealing the area. The plan, agreed to by all agencies, required a sequential and systematic construction of seals providing maximum safety for persons underground. Seals were to be constructed across 3 north entries near the junction with 2 east entries and across 1 east entries, near the junction of

1 east and 2 north. The seals on the inby side of 3 north mains at the junction of 3 north mains and 2 east would be approximately 11,000 feet from the portal shaft. Because of the time that would be involved in transporting materials to the site and constructing four seals, it was decided that construction of seals at this location would be started immediately. A large man door would be built in each seal and the doors would be left open until such time as it became necessary to seal the fire area. At that time, a rescue team could be lowered into the area via the Renner escape shaft. The rescue team could close the doors, and return to the surface via Renner shaft, minimizing exposure of the workmen. The four seals were completed at 5:15 a.m., January 5, 1973. Sites for the outby seals were also selected and prepared near the mouth of 1 east, outby the fire area. (See map Appendix IV). While this work was in progress, reports from persons monitoring the fire area indicated the fire was rekindling. At 11:45 p.m., when the methane content increased and 0.02 percent carbon monoxide was detected, all persons were instructed to retreat to near the mouth of 1 east and start constructing seals across the 1 east entries.

The 1 east main consisted of 8 entries. Numbering from left to right, Numbers 1, 2, 6, 7, and 8 entries were return airways. The Numbers 3, 4, and 5 entries were intake airways. The Number 5 entry was also the track haulage entry. As specified in the plan for sealing, seals were constructed across the Nos. 1, 7, and 8 return airways. Seals were then constructed across the Nos. 3 and 4 headings, intake airways. The seals across the Nos. 2 and 6 headings, return airways, and across the No. 5 entry, an intake airway, were constructed simultaneously. The construction was coordinated by company, State and MESA personnel. The sealing plan allowed for ventilation to be maintained until immediately prior to completion of the sealing of the fire area and would permit all persons to evacuate the mine before the atmosphere in the sealed fire area reached the lower explosive limit. Methane and combustible gases from the fire would build up rapidly when the ventilation was removed from the fire area. The closing and sealing of the doors in the inby seals was coordinated with the completion of the 1 east seals. A rescue team, carrying self-contained oxygen breathing apparatus, was lowered into and raised from the 2 east area via the Renner shaft escape facility to minimize exposure of the men. The doors in the seals at the juncture of 3 north and 2 east were closed and sealed at 3:37 a.m., January 6, 1973. At 4:24 a.m., the fire area was sealed and all persons had been returned to the surface. The electrical power was removed from the underground and

surface areas of the mine except those circuits operating the Portal and Renner ventilating fans. Ventilation was maintained in the unsealed areas of the mine. No one was permitted near the mine opening or fan areas for a period of 72 hours. Access roads to the mine and mine fan locations were guarded. The 72 hour time period would allow the methane content in the sealed area to accumulate to above the upper explosive limit and the oxygen content would decrease. The resultant methane-air mixture would be incapable of exploding. An analysis of air samples collected from the fan exhausts after the waiting period showed the methane content in the unsealed areas of the mine had stabilized and there was no carbon monoxide indicating the seals around the fire area were holding. An inspection group comprised of representatives of management, the employees, the State and MESA entered the mine and examined the seals. All seals were then reinforced with additional concrete blocks and ventilation was directed across the front of the seals.

On January 26, 1973, a 104(a) order of withdrawal was issued barring the removal of seals in 1 east and 3 north at the junction with 2 east.

During construction of the seals in 1 east and across 3 north near the junction with 2 east, provisions were made to permit sampling of the atmosphere within the sealed area. On February 23, 1973, the analysis of samples collected from within the sealed area indicated the atmosphere was incapable of supporting a fire or explosion, and the methane/oxygen content within the sealed area had stabilized. The 104(a) order of withdrawal issued July 23, 1972, was modified to permit normal mining in all areas of the mine except in areas within 100 feet of the sealed area.

PART IV

Investigation, Discussion, and Evaluation

The Bureau of Mines, with the assistance of attorney from the Solicitor's Office, United States Department of the Interior, as part of the preliminary investigation of the mine disaster, took sworn statements from 30 company officials and 25 rank and file miners in Morgantown, West Virginia, on July 26-29, 31, and August 1 and 9, 1972. Statements were obtained from all surviving men who were working in the mine when the fire occurred.

Representatives of the West Virginia Department of Mines, at the Bureau's invitation, fully participated in the phase of the investigation. Representatives from the United Mine Workers of America and Consolidation Coal Company officials were present while statements were being given.

Information obtained through these statements is summarized in the preliminary report.

The Office of Hearings and Appeals, United States Department of the Interior, upon request of the Secretary of the Interior, conducted a public hearing at Morgantown, West Virginia, between October 10 and 19, 1972. A copy of the report on the hearings is appended as part of this report (See Appendix V).

Inasmuch as the fire area has not been totally recovered and is sealed, the investigation of the area has never been completed. Data for this report of investigation was obtained from observation at the scene during recovery operations and from statements of persons interviewed during July 26-29, 31 and August 1 and 9, 1972.

Factors Affecting the Fire Ventilation

The 3 north mains were developed off 1 east and were ventilated from the portal fan until the 3 north entries mined into 2 east. At that time, the ventilation was rearranged. Common intake airways along 3 north mains directed air to the sections. The air from A-1, A-2 and A-9 sections was returned to the surface via the portal fan. The air from the A-3 advancing section was returned to the surface via the No. 8 entry 3 north to 2 east return airways and the Renner fan. Each section was ventilated by a separate split of air off the 3 north airways. The system of ventilation had no effect on the cause or magnitude of the fire. From all indications the fire had burned to the point where the integrity of the escapeway system had been destroyed resulting in smoke and carbon monoxide reaching the workmen in the A-2 and A-3 sections.

Methane

The Blacksville No. 1 mine was liberating approximately 6,125,000 cubic feet of methane in a 24 hour period at the time of the fire. Methane was not a factor in the cause of the fire; however, when the ventilation in 3 north was disrupted by falls of roof and dislodged stoppings, as a result of the fire, the methane build up inby and subsequent explosion was the main factor in the decision by the four participating agencies to seal the mine on the surface on July 24, 1922.

Electricity

The fire resulted when a continuous mining machine being transported on an equipment carrier along the 3 north track haulageway contacted the energized trolley and/or trolley feeder wire. The resulting arcing ignited the oil and other combustible material on the continuous mining machine or equipment carrier. The trolley system was protected by circuit breakers; however, there were conflicting statements concerning deenergizing of the 3 north trolley system when the continuous mining machine contacted the energized wires. The foreman stated he was stationed near the circuit breaker, about 700 feet out by the continuous mining machine, and he deenergized the breaker manually when he saw the arcing. The members of the moving crew stated the foreman was near the machine when the machine contacted the energized wire and after two or three minutes, the circuit breaker automatically deenergized the 3 north trolley system. The circuit breaker was tested by a Federal inspector and was found to be operating properly. It appears that a high-resistance low-current ground fault occurred when the machine contacted the energized wire. Under such a condition there would not have been a sufficient current demand to open the circuit breaker and disconnect power to the 3 north trolley system. It is conceivable that two or three minutes elapsed before the current demand exceeded the 3,000 amperes necessary to operate the circuit breaker. Such a ground fault could generate sufficient heat to ignite any hydraulic oil on the machine. A complete description of the mine electrical system is included in the preliminary report.

Firefighting Facilities

A complete description of the mine firefighting facilities are listed in the preliminary report. The facilities appeared adequate; however, according to statements from workmen, there was some confusion when the water cars were brought to the fire scene and water was not used on the fire. Attempts to extinguish the blaze using a dry chemical extinguisher were unsuccessful.

Escapeways

A complete description of the escapeways are included in the preliminary report. The escapeways should have been adequate to permit persons to escape from the A-2 and A-3 sections had they vacated the sections immediately when the fire occurred. From all indications, because of the time lapse between the time the fire started and the time the men attempted to leave the section, the integrity of the escape system had been destroyed by the fire or during attempted fire-fighting procedures.

Mine Rescue

According to statements received, the fire burned for about 45 minutes before smoke was detected on the A-2 section, and at least 60 minutes after the fire had started, smoke had not been detected in the A-3 section. The crews working the A-2 and A-3 sections were approximately 2,250 and 3,300 feet, respectively in by the origin of the fire. It is reasonable to conclude from information available, that the crews working in the A-2 and A-3 sections could have escaped to safe areas through established escapeways if they had received timely and adequate instructions.

A trained mine rescue team equipped with self-contained breathing apparatus was maintained at the Blacksville No. 1 and nearby Blacksville No. 2 mine. Twelve trained and equipped mine rescue teams were available at nearby mines. The captain and two team members of the Blacksville No. 1 mine arrived at the mine about 8:45 p.m., on the night of the fire. They checked the mine rescue equipment then went underground to assist with the fire-fighting operations. The fire started about 7:30 p.m. and at 12:40 a.m., July 23, 1972, two mine rescue teams were available for rescue attempts. The State of West Virginia coal mine law requires that a backup team of equal strength stationed at the fresh air base shall be provided for each rescue or recovery team performing work with self-contained breathing apparatus. At least two mine rescue teams are required before rescue attempts can be initiated when self-contained breathing apparatus must be used.

Coal and Coal Dust

The high-volatile Pittsburgh coalbed ignites easily when subjected to heat or flame. Although the coalbed was not a factor in the starting of the fire, the easily ignited coal and coal roof contributed to the intensity of the fire. The mine was well rock-dusted and coal spillages were not a factor in the fire.

Extent of Fire

The 3 north area had not been totally recovered before it became necessary to reseal the area. However, the area affected by fire and flame, as evidenced by the burned condition of bodies and materials, was determined. The only area evidencing effects from fire and flame, other than the area immediately surrounding the origin of the fire, was in the A-2 section.

Forces

During recovery operations on Monday, July 24, 1972, the methane content of the air in the return airways outby the fire continued to increase, indicating a danger from an explosion and prompted the representatives of the four participating agencies to direct the mine rescue teams and others to return to the surface. While the men were leaving the fire area, an explosion reoccurred at 2:42 p.m. During recovery operations of January 1973, it was observed that the explosion occurred in the 3 north mains, inby the fire area, and the forces from the explosion destroyed all ventilation controls. The area was covered by soot.

PART V

Findings: Summary of Evidence

The findings of this Part are derived from the following sources: conditions observed in the mine by MESA (MSHA) personnel during the reopening, recovery and resealing operations; information obtained from the mine rescue teams and other persons taking part in the recovery operations and from the preliminary report on the mine fire. After analysis of all available evidence, MSHA investigators summarize their findings below. The findings are in addition to those listed under Summary in the appended preliminary report.

1. The foreman and four workmen in the A-2 section and the four men in the A-3 section were contacted by telephone about 8:00 p.m. and 8:30 p.m. respectively. Reportedly there was no smoke on either section at that time.
2. The foreman on the A-2 section telephoned the dispatcher about 8:15 p.m. and informed him that smoke was present on the section.
3. According to statements received, the fire burned for at least 45 minutes before smoke was detected on the A-2 section, and at least 60 minutes after the fire started, smoke had not been detected on the A-3 section.
4. The foreman and workmen in the A-2 section and the four workmen in the A-3 section were approximately 2,200 feet and 3,600 feet in by the origin of the fire respectively. There were at least two separate and distinct travelable passageways maintained to insure passage at all times of any persons, including disabled persons, and were designated as escapeways. At least one of the escapeways in each section was ventilated with intake air to outby the origin of the fire.
5. There should have been sufficient time for persons in A-2 and A-3 section to escape had they been instructed to do so immediately when the fire started.
6. On July 24, 1972, during fire-fighting and recovery attempts, and after several roof falls had occurred in the fire area, restricting the flow of air in the fire area, the methane content in the return air just outby the fire continued to increase. A danger from a mine explosion was developing and all persons were directed to return to the surface.

7. An explosion occurred about 2:45 p.m. while the men were leaving the mine.
8. Representatives of Consolidation Coal Company, United Mine Workers of America, West Virginia Department of Mines and the Bureau of Mines (MSHA) decided that the mine had to be sealed on the surface to reduce the exposure of workers to possible explosions.
9. The mine was sealed July 25, 1972, and remained sealed until January 2, 1973, when it was determined conditions were suitable for unsealing and reentry.
10. The bodies of the nine victims were recovered January 3 and 4, 1973. Before the area could be totally recovered, the fire rekindled and the fire area had to be resealed.
11. On January 26, 1973, a withdrawal order Form 104(a) was issued to prevent removal of the seals in 1 east and 3 north without prior approval of the United States Bureau of Mines. On February 22, 1973, when the analyses of the air samples collected February 7, 1973 from the 1 east and 3 north sealed fire area indicated a favorable atmosphere, the order of withdrawal Form 104(a) issued on July 23, 1972, was modified to permit normal operations in all parts of the mine except within 100 feet of the sealed fire area.
12. By letter dated July 9, 1976, the President of the Blacksville Division informed the District Manager, District 3, Morgantown, West Virginia, that the Company had no intention of re-opening the sealed fire area in the Blacksville No. 1 Mine, thus precluding the possibility of recovery and further investigation in the fire area.

PART VI

Conclusion

No additional information was obtained to alter the conclusion as stated in the preliminary report. The fire occurred when a 1-JOM ripper-type continuous mining machine being transported in the mine, on a lowboy equipment carrier pulled by a trolley locomotive, came in contact with an energized trolley and/or trolley feeder wires.

Respectfully submitted,

/s/ Mike Dorazio

/s/ Joseph J. Dobis

Mike Dorazio
Federal Coal Mine Inspection
Supervisor

Joseph J. Dobis
Coal Mine Staff
Specialist

/s/ Paul J. Componation

Paul Componation
Coal Mine Safety Specialist

Approved by:

/s/ Joseph O. Cook

Joseph O. Cook
Administrator
for Coal Mine Safety and Health

BLACKSVILLE DIVISION
CONSOLIDATION COAL COMPANY
INCORPORATED

P. O. BOX 24
WANA, W. VA. 26590
PHONE (304) 662-6121

APPENDIX II



ADLER E. SPOTTE
PRESIDENT

July 9, 1976

Mr. Jack E. Tisdale
District Manager
U. S. Department of the Interior
Mining Enforcement & Safety Administration
Coal Mine Health & Safety District 3
P. O. Box 886
Morgantown, WV 26505

Dear Mr. Tisdale:

The Blacksville Operations of Consolidation Coal Company has no intention of re-opening the sealed area of the Blacksville No. 1 Mine at this time. Our reasons at present include:

1. The area suffered from extreme heat and ignitions while sealed from July 25, 1972, until January 2, 1973, and massive slate falls occurred as a result.
2. Slate falls, destroyed ventilation structures (stoppings, overcasts, etc.), and water accumulations restrictive to air movement would cause ventilation problems.

Very truly yours,

Adler E. Spotte
Vice President

AES/ljh

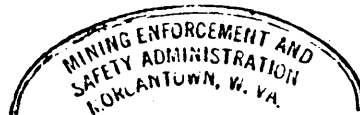


TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/1/72	11:35am	M8084	Skip shaft	2.98	10.55	23.59	0.36	62.26	0.26	positive
8/1/72	11:55am	M8085	portal shaft intake side	4.41	7.90	29.60	.44	57.31	.31	positive
8/1/72	9:50am	M7162	Renner shaft return side	6.15	5.12	59.90	.11	28.66	.06	positive
8/1/72		M7163	Renner shaft intake side	6.27	5.98	51.35	.21	36.00	.15	positive
8/1/72		M7172	portal shaft return side	4.87	7.24	31.21	.44	55.91	.29	positive
8/1/72	2:30pm	M7171	A-3 section borehole	1.55	3.37	77.86	.001	17.18	.00	positive
8/2/72	1:10pm	M8082	A-3 section borehole	1.75	1.80	83.20	0.0006	13.21	0.00	positive
8/2/72	12:05pm	M8083	portal shaft return side	3.99	9.83	27.11	.31	58.57	.19	positive
8/2/72	9:45am	M8211	Renner shaft intake side	4.97	7.06	52.41	.22	35.16	.13	positive
8/2/72	9:30am	M8210	Renner shaft return side	6.89	4.18	60.18	.11	28.57	.05	positive
8/2/72	11:20am	L3737	Skip shaft	3.51	9.27	27.04	.37	59.57	.24	positive
				APPENDIX	III					

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/2/72	11:45am	E7258	portal shaft intake side	4.24	8.78	28.67	.38	57.70	.23	positive
8/3/72	9:20am	M7047	Renner shaft return side	7.34	3.20	63.75	0.11	25.56	0.04	positive
8/3/72	9:35am	M7048	Renner shaft intake side	7.63	3.96	57.48	.21	30.56	.12	positive
8/3/72	1:45pm	M8081	A-3 section borehole	1.88	0.32	89.62	.0006	8.14	.00	positive
8/3/72	12:40pm	M8080	portal shaft return side	5.00	6.58	38.18	.33	49.70	.21	positive
8/3/72	12:10pm	M7170	Skip shaft	3.96	8.06	31.31	.36	56.10	.21	positive
8/3/72	12:25pm	M7169	portal shaft intake side	4.99	6.27	36.00	.37	52.12	.23	positive
8/4/72	9:25am	N1616	Renner shaft return side	7.36	2.66	65.99	0.11	23.79	0.05	positive
8/4/72	9:50am	N1629	Renner shaft intake side	7.91	3.24	59.07	.20	29.41	.11	positive
8/4/72	10:40am	N1684	No. 1 nitrogen borehole outby fire	5.54	2.26	49.67	.30	41.95	.19	positive
8/4/72	1:10pm	N1685	portal shaft return side	4.99	6.20	41.49	.29	46.82	.17	positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/4/72	12:50pm	N1587	portal shaft intake side	5.03	5.72	40.64	.35	48.01	.20	positive
8/4/72	12:40pm	N1594	Skip shaft	4.28	7.06	35.26	.35	52.82	.19	positive
8/4/72	2:00pm	M7681	A-3 section borehole	1.80	1.07	86.59	.0006	10.48	.00	positive
8/5/72	12:05pm	N1677	portal shaft intake side	5.13	5.13	43.89	0.32	45.29	0.17	positive
8/5/72	12:25pm	N1678	portal shaft return side	5.01	5.84	44.71	.26	43.98	.15	positive
8/5/72	11:40am	M7666	Skip shaft	4.53	6.29	39.21	.32	49.42	.17	positive
8/5/72	10:55am	N1727	Renner shaft intake side	8.29	2.76	62.12	.18	26.48	.09	positive
8/5/72	10:35am	N1728	Renner shaft return side	7.95	2.05	69.51	.11	20.29	.04	positive
8/5/72	1:30pm	M8072	A-3 section borehole	1.69	0.99	87.85	.002	9.41	.00	positive
8/7/72	11:45am	N915	portal shaft intake side	5.90	3.61	49.58	0.28	40.41	0.13	positive
8/7/72	11:55am	N914	portal shaft return side	5.53	4.23	51.00	.23	38.83	.11	positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1

COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/7/72	11:20am	M8079	Skip shaft	5.15	4.86	45.68	.28	43.84	.12	positive
8/7/72	9:35am	N904	Renner shaft intake side	8.96	1.80	66.28	.16	22.64	.07	positive
8/7/72	9:20am	N905	Renner shaft return side	8.34	1.37	72.67	.09	17.44	.03	positive
8/7/72	9:10am	N916	A-3 section borehole	1.76	0.68	89.37	.001	8.12	.00	positive
8/7/72	1:45pm	N917	No. 1 nitrogen borehole outby fire	2.36	13.44	17.00	.15	66.90	.10	positive
8/9/72	12:25pm	N1543	portal shaft intake side	6.06	3.04	53.49	0.23	37.01	0.08	positive
8/9/72	12:40pm	M8226	portal shaft return side	6.12	3.24	55.42	.19	34.88	.07	positive
8/9/72	12:10pm	N1544	Skip shaft	5.48	3.74	51.28	.23	39.11	.08	positive
8/9/72	1:45pm	N1044	Renner shaft intake side	9.41	1.24	69.86	.13	19.22	.04	positive
8/9/72	1:20pm	M8229	Renner shaft return side	8.87	0.93	74.92	.08	15.11	.02	positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/9/72	8:10am	M8233	A-3 section borehole	1.35	1.21	88.34	.000	9.00	.00	positive
8/9/72	11:15am	M8232	No. 1 nitrogen borehole outby fire	4.64	7.75	34.89	.16	52.42	.07	positive
8/10/72		N1596	portal shaft intake side	6.27	2.49	56.57	0.21	34.28	0.07	positive
8/10/72	10:15am	N1595	portal shaft return side	6.17	3.03	57.41	.18	33.06	.06	positive
8/10/72	10:40am	N1555	Skip shaft	5.65	3.36	53.53	.21	37.08	.07	positive
8/10/72	12:30pm	K7625	Renner shaft intake side	9.47	0.97	71.42	.11	17.89	.03	positive
8/10/72	12:10pm	N1553	Renner shaft return side	8.98	.68	75.76	.06	14.43	.01	positive
8/10/72	2:15pm	M8218	A-3 section borehole	1.71	1.46	85.38	.000	11.38	.00	positive
8/10/72	1:20pm	N1554	No. 1 nitrogen borehole outby fire	7.29	1.07	55.53	.21	35.70	.06	positive
8/11/72	10:35am	M8214	portal shaft intake side	6.57	2.25	58.97	0.19	31.88	0.05	positive

APPENDIX III continued

COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/11/72	10:45am	M7180	portal shaft return side	6.43	2.57	59.85	.16	30.86	.05	positive
8/11/72		M7174	Skip shaft	5.83	3.01	55.58	.19	35.24	.06	positive
8/11/72	11:45am	N1538	Renner shaft intake side	9.69	0.84	72.21	.10	17.04	.02	positive
8/11/72	11:20am	L1103	Renner shaft return side	9.06	.62	76.55	.06	13.64	.00	positive
8/11/72	1:15pm	N1541	A-3 section borehole	1.79	.73	88.16	.000	9.20	.00	positive
8/11/72	12:35pm	N1542	No. 1 nitrogen borehole outby fire	7.39	.91	57.86	.001	33.66	.05	positive
8/16/72	1:45pm	N1103	portal shaft intake side	7.26	1.08	63.43	0.17	27.95	0.01	positive
8/16/72	2:00pm	N909	portal shaft return side	7.07	1.37	65.57	.12	25.79	.01	positive
8/16/72	1:00pm	N1111	Skip shaft	6.53	1.75	62.26	.15	29.24	.00	positive
8/16/72	3:00pm	N912	Renner shaft intake side	10.15	0.39	77.06	.08	12.23	.00	positive
8/16/72	2:35pm	N913	Renner shaft return side	8.73	1.64	75.21	.04	14.32	.00	positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/16/72	4:30pm	N1584	A-3 section borehole	1.57	1.18	87.10	.000	10.08	.00	positive
8/16/72	3:40pm	N1583	No. 1 nitrogen borehole outby fire	8.70	0.44	64.85	.14	25.70	.02	positive
8/21/72	10:30am	N1591	portal shaft intake side	7.81	0.53	70.96	0.10	20.47	0.00	positive
8/21/72	10:45am	N1590	portal shaft return side	7.11	1.47	69.62	.06	21.65	.00	positive
8/21/72	10:00am	N902	Skip shaft	7.46	0.85	69.69	.08	21.81	.00	positive
8/21/72	12:30pm	N1552	Renner shaft intake side	10.27	0.19	79.77	.03	9.63	.00	positive
8/21/72	12:10pm	K6649	Renner shaft return side	6.25	6.96	53.58	.01	33.16	.00	positive
8/21/72	2:10pm	M7506	A-3 section borehole	1.17	6.19	66.32	.001	26.28	.00	positive
8/21/72	1:15pm	M7505	No. 1 nitrogen borehole outby fire	10.32	0.93	69.70	.06	18.81	.00	positive
9/5/72	11:45am	M9813	portal shaft intake side	8.67	0.46	79.93	0.10			positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
9/5/72	12:05pm	M9241	portal shaft return side	8.21	.46	79.64	.06			positive
9/5/72	12:20pm	N1539	Skip shaft	8.07	3.35	68.20	.08			positive
9/5/72	11:15am	N924	Renner shaft intake side	8.74	0.80	79.93	.03			positive
9/5/72	10:45am	N925	Renner shaft return side	8.96	.12	82.89	.01			positive
9/5/72	9:00am	N1096	A-3 section borehole	0.88	1.00	88.08	.001			positive
9/5/72	10:15am	N132	No. 1 nitrogen borehole outby fire	12.53	0.02	80.00	.06			positive
8/28/72	9:05am	N1617	portal shaft intake side	7.65	0.05	76.81	0.10			positive
8/28/72	9:25am	N908	portal shaft return side	7.26	.39	77.22	.06			positive
8/28/72	8:45am	N1628	Skip shaft	8.68	.15	76.53	.08			positive
8/28/72	11:00am	N1577	Renner shaft intake side	9.26	.12	81.17	.03			positive
8/28/72	10:30am	N1576	Renner shaft return side	3.36	12.31	34.02	.01			positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
8/28/72	2:00pm	N906	A-3 section borehole	1.07	0.73	88.61	.001			positive
8/28/72	12:20pm	M3746	No. 1 nitro- gen borehole outby fire	10.47	2.37	68.64	.06			positive
9/11/72	9:30am	N910	portal shaft intake side	9.26	0.22	81.91	0.007	8.42		positive
9/11/72	9:50am	N1540	portal shaft return side	9.03	.12	81.76	.004	8.97		positive
9/11/72	10:20am	N890	Skip shaft	10.13	.10	81.58	.006	7.99		positive
9/11/72	11:20am	N903	Renner shaft intake side	9.29	.15	83.24	.003	7.24		positive
9/11/72	11:45am	N895	Renner shaft return side	9.25	.32	82.88	.003	7.45		positive
9/11/72	12:20pm	N898	A-3 section borehole	1.53	.83	88.76	.003	8.83		positive
9/11/72	1:00pm	N900	No. 1 nitro- gen borehole outby fire	12.79	.15	80.15	.006	6.67		positive
9/11/72	1:30pm	N892	No. 2 nitro- gen borehole inby fire	13.83	.10	80.19	.004	5.66		positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
9/19/72	1:10pm	N1729	portal shaft intake side	9.77	0.19	82.32	0.0087	7.55		positive
9/19/72	1:25pm	N1792	portal shaft return side	9.68	.12	82.84	.0071	7.24		positive
9/19/72	12:50pm	N1734	Skip shaft	10.63	.20	81.81	.0079	7.18		positive
9/19/72	2:20pm	N1859	Renner shaft intake side	9.32	.20	83.10	.0064	7.29		positive
9/19/72	2:00pm	N1858	Renner shaft return side	9.27	.37	82.69	.0064	7.57		positive
9/19/72	2:50pm	N1862	A-3 section borehole	1.59	.92	87.58	.0032	9.85		neutral
9/19/72	10:00am	N1674	No. 1 nitrogen borehole outby fire	12.93	.02	80.67	.0088	6.17		positive
9/19/72	12:15pm	N1681	No. 2 nitrogen borehole inby fire	13.52	.20	80.22	.0064	5.86		positive
9/25/72	9:10am	N5077	portal shaft intake side	9.73	0.27	82.09	0.0078	7.75		positive
9/25/72	9:40am	N5069	portal shaft return side	9.77	.07	82.75	.0064	7.27		positive

APPENDIX III continued

TABLE I - ANALYSIS OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
9/25/72	10:10am	N5005	Skip shaft	10.63	.10	81.96	.0064	7.13		positive
9/25/72	1:15pm	N5032	Renner shaft intake side	9.39	.17	83.63	.0073	6.72		positive
9/25/72	12:50pm	N5025	Renner shaft return side	9.42	.15	83.62	.0054	6.72		positive
9/25/72	2:00pm	N5006	A-3 section borehole	1.64	.24	90.37	.0029	7.70		positive
9/25/72	12:10pm	N1682	No. 1 nitrogen borehole outby fire	12.72	.12	80.02	.0068	6.93		positive
9/25/72	11:15am	N1675	No. 2 nitrogen borehole inby fire	13.45	.34	80.05	.0062	5.97		positive
10/2/72	12:45pm	M7920	portal shaft intake side	9.94	0.20	83.29	0.0034	6.42		positive
10/2/72	1:00pm	M7913	portal shaft return side	9.86	.15	83.86	.0032	6.00		positive
10/2/72	1:20pm	N751	Skip shaft	10.71	.12	82.91	.0036	6.10		positive
10/2/72	12:15pm	M7905	Renner shaft intake side	9.55	.12	84.48	.0029	5.78		positive
10/2/72	11:45am	M7906	Renner shaft return side	9.25	.83	84.27	.0023	5.57		positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
10/2/72	8:50am	N752	A-3 section borehole	1.57	1.13	87.59	.0012	9.66		positive
10/2/72	10:40am	L5888	No. 1 nitrogen borehole outby fire	13.03	0.05	81.28	.0056	5.45		positive
10/2/72	11:00am	N2197	No. 2 nitrogen borehole inby fire	13.69	.17	80.94	.0044	5.01		positive
10/10/72	9:10am	N5073	portal shaft intake side	9.95	0.56	83.14	0.0052	6.17		positive
10/10/72	9:35am	N5065	portal shaft return side	9.91	.12	84.37	.0039	5.46		positive
10/10/72	10:00am	N4975	Skip shaft	8.39	4.78	65.54	.0045	21.16		positive
10/10/72	12:40pm	N5033	Renner shaft intake side	9.55	0.22	84.44	.0040	5.71		positive
10/10/72	12:20pm	N5026	Renner shaft return side	9.46	.48	83.69	.0034	6.29		positive
10/10/72	10:40am	N4969	A-3 section borehole	1.51	2.45	82.19	.0030	13.80		positive
10/10/72	11:50am	N4992	No. 1 nitrogen borehole outby fire	13.05	0.10	82.08	.0048	4.57		positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
10/10/72	11:30am	N4999	No. 2 nitrogen borehole inby fire	13.62	.07	81.55	.0040	4.55		positive
10/17/72	8:40am	N772	portal shaft intake side	10.04	0.45	83.84	0.0039	5.51		positive
10/17/72	8:55am	N771	portal shaft return side	10.08	.15	84.96	.0038	4.68		positive
10/17/72	9:10am	N764	Skip shaft	10.84	.12	84.43	.0029	4.45		positive
10/17/72	9:45am	N646	Renner shaft intake side	9.12	.83	82.44	.0031	7.53		positive
10/17/72	9:40am	N638	Renner shaft return side	9.43	.10	85.85	.0032	4.53		positive
10/17/72	11:00am	N763	A-3 section borehole	1.48	1.97	84.34	.0021	12.16		positive
10/17/72	10:25am	N4991	No. 1 nitrogen borehole outby fire	12.24	0.10	82.43	.0036	5.04		positive
10/17/72	10:10am	N4998	No. 2 nitrogen borehole inby fire	13.57	.10	81.96	.0034	4.18		positive
10/24/72	9:00am	N5094	portal shaft intake side	10.02	0.39	81.62	0.0031	7.84		positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
10/24/72	9:10am	N5102	portal shaft return side	10.04	0.10	84.10	.0004	5.64		positive
10/24/72	9:20am	N624	Skip shaft	10.76	.10	82.97	.0029	6.02		positive
10/24/72	10:40am	N585	Renner shaft intake side	9.54	.49	83.75	.0034	6.15		positive
10/24/72	10:20am	N584	Renner shaft return side	7.86	5.21	62.46	.0021	24.40		positive
10/24/72	12:05pm	N601	A-3 section borehole	1.65	1.81	84.33	.0002	12.16		neutral
10/24/72	11:15am	N629	No. 1 nitrogen borehole outby fire	13.03	0.15	81.20	.0029	5.44		positive
10/24/72	11:00am	N622	No. 2 nitrogen borehole inby fire	13.62	.14	80.26	.0029	5.79		positive
11/1/72	1:20pm	N4563	portal shaft intake side	10.30	0.25	83.36	0.0027	5.93		positive
11/1/72	1:30pm	N4564	portal shaft return side	9.95	.15	83.81	.0028	5.96		positive
11/1/72	1:40pm	N5004	Skip shaft	10.74	.10	83.12	.0031	5.88		positive
11/1/72	11:35am	N4976	Renner shaft intake side	9.46	.20	84.14	.0034	6.13		positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
11/1/72	11:30am	N4968	Renner shaft return side	9.33	.95	80.61	.0025	9.03		positive
11/1/72	12:40pm	N4997	A-3 section borehole	1.62	.10	93.77	.0021	4.46		positive
11/1/72	11:55am	N5101	No. 1 nitrogen borehole outby fire	12.73	.10	83.80	.0029	3.19		positive
11/1/72	11:50am	N5070	No. 2 nitrogen borehole inby fire	12.89	.10	83.77	.0019	3.05		positive
11/14/72	9:25am	N5090	Portal shaft intake side	10.39	0.20	85.15	0.0029	4.12		positive
11/14/72	9:35am	N5082	Portal shaft return side	9.93	.15	85.15	.0026	4.66		positive
11/14/72	9:40am	N5103	Skip shaft	10.89	.17	84.65	.0029	4.14		positive
11/14/72	10:10am	N596	Renner shaft intake side	9.64	.12	86.63	.0027	3.55		positive
11/14/72	10:05am	N597	Renner shaft return side	9.73	.12	86.63	.0021	3.45		positive
11/14/72	11:15am	N5095	A-3 section borehole	11.51	.10	84.65	.0017	3.55		positive

APPENDIX III continued

TABLE I - ANALYSES OF AIR SAMPLES

MINE Blacksville No. 1COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
11/14/72	10:40am	N5018	No. 1 nitrogen borehole outby fire	13.15	.10	83.66	.0019	2.92		positive
11/14/72	10:25am	N5019	No. 2 nitrogen borehole inby fire	13.57	.10	83.66	.0026	2.50		positive
11/7/72	8:40am	N5119	Portal shaft intake side	10.14	0.52	82.56	0.0029	6.65		positive
11/7/72	8:50am	N5111	Portal shaft return side	10.16	.10	82.35	.0012	7.29		positive
11/7/72	9:00am	N5054	Skip shaft	10.87	.10	81.56	.0019	7.34		positive
11/7/72	9:30am	N5117	Renner shaft intake side	9.75	.10	82.67	.0024	7.48		positive
11/7/72	9:25am	N5061	Renner shaft return side	9.78	.10	88.37	.0025	1.75		positive
11/7/72	11:00am	N5012	A-3 section borehole	13.21	.12	84.55	.0015	1.92		positive
11/7/72	10:15am	N5118	No. 1 nitrogen borehole outby fire	13.08	.10	85.07	.0025	1.58		positive
11/7/72	9:45am	N5110	No. 2 nitrogen borehole inby fire	13.56	.10	84.16	.0022	2.01		positive

APPENDIX III continued

COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
11/21/72	8:45am	N5093	portal shaft intake side	10.34	0.08	85.74	0.0029	3.67		positive
11/21/72	8:50am	N5085	portal shaft return side	10.16	.11	85.85	.0028	3.73		positive
11/21/72	9:00am	N4980	Skip shaft	9.49	2.67	70.77	.0028	16.93		positive
11/21/72	9:25am	N5074	Renner shaft intake side	9.73	0.15	86.28	.0029	3.76		positive
11/21/72	9:20am	N5066	Renner shaft return side	7.78	4.47	67.15	.0025	20.57		positive
11/21/72	10:30am	N4984	A-3 section borehole	11.72	0.10	86.28	.0021	1.66		positive
11/21/72	9:55am	N4549	No. 1 nitrogen borehole outby fire	13.02	.36	85.42	.0022	0.99		positive
11/21/72	9:40am	N4541	No. 2 nitrogen borehole inby fire	13.53	.10	85.50	.0027	.66		positive
11/28/72	9:00am	N746	portal shaft intake side	10.21	0.45	88.44	0.0023	0.77		positive
11/28/72	9:05am	N745	portal shaft return side	10.21	.12	87.81	.0025	1.76		positive

APPENDIX III continued

MINE Blacksville No. 1

COMPANY Consolidation Coal Company,
Blacksville Division

[illegible]

COMPANY Consolidation Coal Company,
Blacksville Division

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
12/5/72	8:20am	N750	A-3 section borehole	11.44	.12	83.95	.0016	4.29		positive
12/5/72	9:05am	N907	No. 1 nitrogen borehole outby fire	12.55	.10	82.81	.0016	4.36		positive
12/5/72	8:50am	N4787	No. 2 nitrogen borehole inby fire	12.84	.10	82.29	.0018	4.59		positive
12/19/72	10:50am	N4611	portal shaft intake side	10.33	0.14	85.36	0.0020	4.08		positive
12/19/72	11:00am	N4624	portal shaft return side	10.17	.10	85.22	.0017	4.38		positive
12/19/72	11:10am	N4560	Skip shaft	10.75	.11	85.08	.0016	3.90		positive
12/19/72	10:30am	N4571	Renner shaft intake side	9.77	.20	85.18	.0016	4.76		positive
12/19/72	10:40am	N4572	Renner shaft return side	9.84	.19	83.22	.0023	6.66		positive
12/19/72	8:45am	N4559	A-3 section borehole	11.92	.58	83.53	.0014	3.76		positive
12/19/72	9:40am	N4553	No. 1 nitrogen borehole outby fire	12.98	.10	82.99	.0016	3.75		positive

APPENDIX III continued

MINE Blacksville No. 1

MINE Blacksville No. 1

DATE COLLECTED	TIME	BOTTLE NUMBER	LOCATION	CARBON DIOXIDE	OXYGEN	METHANE	CARBON MONOXIDE	NITROGEN	HYDROGEN	PRESSURE ON SEAL
12/19/72	9:20am	N4546	No. 2 nitrogen borehole inby fire	13.34	.10	83.02	.0012	3.37		positive
12/12/72	10:30am	N5105	portal shaft intake side	10.22	0.20	84.37	0.0019	5.05		positive
12/12/72	10:40am	N5097	portal shaft return side	10.26	.10	84.71	.0018	4.79		positive
12/12/72	10:50am	N731	Skip shaft	10.21	1.03	80.31	.0018	8.39		positive
12/12/72	9:50am	N761	Renner shaft intake side	9.47	0.20	84.69	.0014	5.56		positive
12/12/72	10:00am	N762	Renner shaft return side	9.52	.12	85.06	.0021	5.20		positive
12/12/72	8:50am	N732	A-3 section borehole	11.50	.19	83.07	.0014	5.03		positive
12/12/72	9:15am	N757	No. 1 nitrogen borehole outby fire	13.00	.10	82.07	.0034	4.65		positive
12/12/72	9:30am	N758	No. 2 nitrogen borehole inby fire	13.18	.12	81.83	.0021	4.68		positive

APPENDIX III continued

ANALYSES OF FIRE SEAL SAMPLES

LOCATION Blacksville, Monongalia County, West Virginia DATE COLLECTED February 7, 1973

MINE Blacksville No. 1 COMPANY Consolidation Coal Company, COLLECTED BY Ellis L. Mitchell
Blacksville Division

BOTTLE NUMBER	LOCATION IN MINE	PERCENT IN VOLUME							PRESSURE ON SEAL
		CARBON DIOXIDE	OXYGEN	METHANE	NITROGEN	CARBON MONOXIDE	HYDROGEN	ETHANE	
N6230	No. 3 seal 2 east (2-07-73, 10:30 a.m.)	9.82	1.32	68.86	19.88	0.0038		0.12	positive
N6220	No. 2 seal 1 east (2-07-73, 9:00 a.m.)	6.29	1.15	71.36	21.09	.0042		.11	negative

APPENDIX III continued

APPENDIX III continued



APPENDIX V
IN REPLY REFER TO:

United States Department of the Interior

OFFICE OF HEARINGS AND APPEALS
OIL IMPORT APPEALS BOARD
4015 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22203

In Re)
DISASTER AT)
BLACKSVILLE NUMBER 1 MINE) D 73-1
)

INTERIM REPORT

On July 22, 1972, a fire occurred underground in Blacksville Number 1 coal mine, operated at Blacksville, West Virginia, by the Blacksville Division of Consolidation Coal Company of New York, New York. Nine men were trapped in the mine and died as a result of the fire.

This Office, upon request of the Secretary of the Interior, conducted a public hearing at Morgantown, West Virginia, between October 10 and 19, 1972.¹ The purpose of the hearing was to inquire into the facts and circumstances of the fire to determine the conditions present in the mine and the cause of the disaster in order to determine whether applicable health and safety standards were adequate and had been complied with. State of West Virginia Department of Mines representatives, United States Bureau of Mines officials, the Vice President of the United Mine Workers of America, the present Solicitor for Safety Affairs of the United Mine Workers of America, then a representative of Miners for Democracy and the President of the Blacksville Division of Consolidation Coal Company with other company officials all appeared

^{1/} Copies of the hearing transcript are available at the Office of Hearings and Appeals, 4015 Wilson Boulevard, Arlington, Virginia 22203 and at the University of West Virginia School of Mines, 213 White Hall, Morgantown, West Virginia 26506.

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with counsel and participated in the hearing both through questioning of other witnesses and presentation of testimony.

Testimony was obtained from these listed participants and also from many individuals, miners and others, who appeared either voluntarily or in response to subpoenas issued by this Office. Persons having direct knowledge of the events testified as well as several expert witnesses. The hearing audience, which included survivors of the nine deceased miners, miners from the same and other mines in the area as well as faculty and staff from the University of West Virginia School of Mines, was invited to submit questions at any time. In the course of the hearing, several hundred were submitted and asked.

According to evidence developed at the hearing, the fire began in the track haulage entry of the Number 3 North heading of the mine during the non-production or maintenance shift on Saturday afternoon, July 22, 1972. The fire was caused by some form of electrical short circuit occasioned when a continuous miner being hauled on the track contacted the energized trolley wires. The contact occurred as the men moving the mining machine continued their efforts to do so despite repeated contacts of insulation on top of the miner with the overhead trolley wire incurred because the height of the entry left minimal or no clearance between the machine, the trolley wire or the entry roof. Movement of this miner was begun on the day shift and continued on the afternoon shift despite knowledge of contact with the trolley wire and entry roof by a loading

APPENDIX V continued

machine while it was being moved on the morning shift in that same entry on the same day--contact also incurred because of the tight clearance.

The exact time the fire began is in doubt since various witnesses, equally credible, posit different times. The same situation exists as to the time various evacuated miners were notified of the fire. Similar conflicts of testimony also exist as to the time of the notice of the fire or evacuation directions given the men in-by the moving machine. These conflicts of testimony and the initial abandonment of the fire underline the evident lack of training in fire suppression and evacuation techniques which clearly would have brought about a more aware and disciplined response to the fire and entrapment of men from all who were then present in the mine.

Once evacuation of the men underground, except the nine in-by the fire, had occurred, officials from the Consolidation Coal Company, the United Mine Workers of America, the State of West Virginia Department of Mines and the U.S. Bureau of Mines arrived at the mine and began efforts to rescue the nine men and to control the fire. It is noted that, under the applicable West Virginia Code, Chapter 22, art. 1, section 33 (Michie Supp., 1972), three six-man rescue teams were required to be assembled so that one would remain on the surface as a backup for two underground in order that one of the two could actually make rescue efforts. It was over four hours after the fire began before three

APPENDIX V continued

teams were assembled and equipped and two went underground and it was well over five hours before actual rescue attempts were made to reach the nine entrapped men. Explanations for this time lapse given at the hearing conducted by this Office varied from misinformation as to whether anyone was trapped by the fire, delayed efforts on the part of company officials to call for rescue teams, slow assembly of the teams because it was Saturday night and a delay in the decision to actually begin rescue operations until State, Bureau, company, and UMWA officials became factually informed and reached a four-way decision on rescue effort direction. The location of the bodies and the confusion of the time of notice to evacuate leave uncertain the time of death of the entrapped men. For this reason it is not clear at this time whether the slow assembly and subsequent delay in utilizing rescue teams for actual rescue efforts contributed to the death of the entrapped men. From the reasons given for late assembly and delayed utilization of the rescue teams for rescue work and comments on future avoidance of these problems, no simple clear solution can be developed in this report to reduce or eliminate such problems. The concerned officials of Federal, State, operating companies, and miners' representatives should evaluate this situation and in the near future make efforts to provide for prompt assembly of fully-equipped rescue teams and prompt, informed decision-making for immediate utilization of their services.

Having determined that the fire had created conditions in the mine likely to cause death or serious physical harm, the representative of the Bureau

of Mines, shortly after midnight, July 22, 1973, issued an imminent danger Order, under section 104A of the Coal Mine Health and Safety Act of 1969, 83 Stat. 742, 30 USC Chapter 22, requiring all persons except those needed for fire fighting and exploration work be withdrawn from the mine. After continuous efforts by miners on duty and by rescue teams for over a day and a half to reach the men in-by had failed and efforts to control the fire had failed, the officials who had supervised these efforts--the representatives from the State of West Virginia Department of Mines, the U.S. Bureau of Mines, the United Mine Workers of America and the Consolidation Coal Company--made a joint decision to seal the mine. The decision to seal the mine was made in view of the underground atmospheric methane content having increased to a point where a substantial explosion was imminent which would likely endanger the lives of rescuers or fire fighters and all others present at the mine. The mine was completely sealed on the morning of July 25, 1972.

These same evidentiary facts as set out above were ascertained in late July and early August of 1972 by attorneys on the Department of the Interior Solicitor's staff and mine inspectors of the Bureau of Mines as they conducted an investigation through recorded interviews on behalf of the Bureau of Mines. Miners on duty underground and above, company officials, and United Mine Workers of America officials were interviewed and the transcripts and the preliminary report of the Bureau were later made available to the public. The State of West Virginia Department of Mines officials conducted a public hearing in August of 1972, and many of the same persons interviewed by the Solicitor's attorneys appeared and testified.

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The transcripts from those hearings and the preliminary report by the State officials have been made public. The hearings conducted by this Office, transcripts of which are available to the public, while producing a more detailed explanation of the events of the fire and evacuation of the mine, disclosed no new or conclusive evidence to settle the conflicts in testimony concerning the time of the fire, the notice of the fire given the nine entrapped men, the inability or failure of these men to evacuate and the initial abandonment of the fire prior to the rescue efforts and efforts to control the fire.

The mine remained sealed throughout all investigations and hearings inquiring into the circumstance of the fire and loss of lives. Re-opening of the mine to recover the bodies of the victims and thoroughly investigate the circumstance of the fire occurred on January 2, 1973. The mine was unsealed for approximately 72 hours. Officials from the State of West Virginia Department of Mines, U.S. Bureau of Mines, United Mine Workers of America and the Consolidation Coal Company entered the mine. The bodies of the nine men were recovered--five bodies were located in the belt entry in A-2 and the four remaining were in the return air escape-way portion of 3 North between the A-2 and A-3 entries. During the recovery operation, a tentative investigation was begun but when the fire rekindled the entire area originally affected by fire was resealed.

On January 19, 1973, the Director of the Bureau of Mines informed this Office that the Bureau had developed no new evidence for presentation at a possible re-opening of the public hearing. On the available information this Office anticipated that it would possibly be safe to re-open

the mine within six months or shortly after mid-1973 at which time a complete investigation would be conducted and the Bureau officials would then be in a position to present their complete findings of facts and conclusions. Opportunity would also be given for presentation by officials from the State of West Virginia Department of Mines, the United Mine Workers of America and the Consolidation Coal Company.

Effective July 16, 1973, the mine safety enforcement functions of the Bureau of Mines were transferred to the newly created Mining Enforcement and Safety Administration (MESA), 38 FR 18695 (July 13, 1973). In response to our September 11, 1973, request, the Administrator of Mining Enforcement and Safety Administration on October 30, 1973, informed this Office that there were no plans to re-open the area in the mine where the fire occurred in the foreseeable future. Since the mine is presently sealed and the fire investigation is incomplete, no useful purpose would be served in this report to fully restate the presently well known facts and circumstances relating to the fire, the resultant loss of lives and sealing of the mine.

In the period of time following the fire and before the mine was sealed, inspectors from the Bureau of Mines investigated the events leading up to the fire and the conditions present in the mine at the time of the fire and other related circumstances. Their findings, with the findings of their above mentioned recorded interview investigation, and the factual matters brought out in testimony at the State hearings as well as the public hearing conducted by this Office, apparently have not enabled officials of the Bureau to fully determine all violations that may have occurred under the

APPENDIX V continued

applicable Federal Coal Mine Health and Safety Act of 1969, above cited, and the implementing regulations, 30 CFR Part 75, relating to the fire, evacuation of men or loss of lives. Final determination of whether such violations have occurred or a demonstration that it is impossible to make such a determination awaits unsealing of the fire related areas which are presently closed. In view of the impossibility of stating conclusions with finality until the affected fire area of the mine has been unsealed and thoroughly examined, no further comment is in order respecting the relationship of the then existing regulations to the presently known facts.

During investigations into the events of the fire and loss of lives and the subsequent hearings, the existence of a provision in the applicable West Virginia Code, Chapter 22, art. 2, section 6 (Michie Supp., 1972), related to the movement of equipment with persons in-by the equipment in the same ventilating current and the question of a possible violation of that law were thoroughly explored. Inferences of possible negligent acts of willful actions intentionally endangering others were also raised and explored during the investigations and hearings. The ascertainment of the relevant state criminal laws or civil laws providing remedies and or penalties for negligent or criminal action and the determination of civil or criminal liability under such laws of any individual or officials of Consolidation Coal Company are not within the scope of the hearing conducted by this Office nor of this report and accordingly will not be further discussed.

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During the hearing conducted by this Office, it became apparent that there were no applicable regulations published by the Department similar to those of the West Virginia Mining Law relating to the movement of equipment with persons in-by, rescue team assemblies, or on fire drill and escapeway training requirements or other events which took place during the Blacksville Number 1 fire and which obviously should be controlled by federal regulations. On this subject, Bureau of Mines officials presented evidence to the effect that prior and subsequent to the fire they had drafted proposed regulations covering most, if not all, aspects of training in prevention and control of fires and evacuation of personnel in situations similar to the fire of July 22, 1972, at Blacksville Number 1. A published version of these proposed mandatory safety standards appeared in the Federal Register on December 12, 1972 (37 FR 26422-26424). These proposed rules were published by the Department of the Interior as mandatory safety standard additions to 30 CFR Part 75 on October 31, 1973 (38 FR 29997). Among other things, these new standards include provisions for frequent testing and calibration of devices for overcurrent protection; requirements for movement of off-track mining equipment in areas where energized trolley wires or trolley feeder wires are present; provisions for instruction in the location and use of fire fighting equipment, escapeways, exits, routes of travel and for fire drills; improvements in two-way communication between working sections and the surface; and improvements in escapeways and periodic drills in their use. It is noted that many of the provisions, as promulgated, cover suggested improvements

made through question and answer sessions in the hearing conducted by this Office. In view of this rulemaking activity, no further suggestions are needed at this time concerning rulemaking by Departmental officials as related to the facts and circumstance of the July 22, 1972 fire at Blacksville Number 1 coal mine. It is noted that the publishing of regulations alone will not prevent a recurrence of another Blacksville. What is needed is full implementation and follow-up of the practices, procedures and training activities envisioned in these regulations by all concerned--the officials of the Mining Enforcement and Safety Administration, United Mine Workers of America, the coal mine operators and the miners themselves.

The vantage point provided in conducting the public hearing by this Office leads to some necessary observations. Given the largeness and highly mechanized industrial approach to coal mining in mines similar to Blacksville Number 1 and the awareness that a coal miner in such a mine is typically a highly skilled specialist in a particular facet of the complicated, fast-moving production of coal, the attitudes which persist in some officials of the Consolidation Coal Company and some of its miners are incomprehensible. Specifically, the hardy self-reliant, consciously uninformed, intentional risk-taking attitude of pick and shovel mining of a bygone age has no place in the coal mining industry of today. Production oriented management by coal mine operating companies, intentionally or not, frequently encourages this risk-taking attitude in company men and

the working miner in order to meet production standards. The conscious indifference to the acquisition of urgently needed safety information, as evidenced by low attendance at training classes sponsored by state and federal mine safety officials, indicates the persistence of this obsolete attitude of the self-reliant coal miner of the past. The Blacksville disaster clearly points to a need on the part of operating company officials, miners' representatives and coal miners themselves to rethink and improve on this situation. The conscious risk-taking of the men who attended the movement of this continuous miner through an area of tight clearance in order to get the job done as assigned, believing all the while that complete necessary precautions were being taken, clearly demonstrates the need to eliminate this unfortunate attitude. It is encouraging to note from testimony during the hearing that both company officials and rank and file miners, the United Mine Workers of America, as well as federal and state officials are actively engaged in correcting deficiencies of this nature.

The factual material discussed herein, with the exception of the information obtained during the brief re-opening, is based on evidence gathered prior to the sealing of the mine and is not in dispute. Information obtained during the brief re-opening of the mine is insufficient to provide a basis for further conclusions of a final nature at this time. A re-opening, although apparently not in the foreseeable future, will certainly provide opportunity to more fully investigate the conditions in the mine. Where evidentiary material has not been destroyed by fire or explosion, facts may

APPENDIX V continued

be developed which may necessitate re-opening of the hearing on this disaster. It is presently clear that some evidentiary material has already been destroyed by the fire that will cause some questions to always remain unanswered. In any event, further action by this Office awaits investigation results of the re-opening of the sealed areas of Blacksville Number 1 Mine.

Daniel Harris

Dated: November 27, 1973

Daniel Harris
Hearing Officer