CAI-2012-15

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fall of Face, Rib, Pillar or Highwall
September 13, 2012

Blacksville No. 2 Mine
Consol Energy
Wana, Monongalia County, West Virginia
MSHA I.D. No. 46-01968

Accident Investigator

Jan B. Lyall
Coal Mine Safety & Health Specialist (Roof Control)

Originating Office
Mine Safety and Health Administration
District 3
604 Cheat Road Morgantown, West Virginia 26508

Bob E. Cornett, District Manager

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PHOTO OF ACCIDENT SCENE

OVERVIEW

On Thursday, September 13, 2012, at approximately 3:30 P.M., victim, William E. Mock, a 61-year old, General Inside Laborer, sustained fatal injuries. A piece of mine roof measuring 11 feet long, 5 feet wide and ranging in thickness from 4 inches to 11 inches, fell and stuck the victim. Mock and Doug Ice Jr., General Inside Laborer, were attempting to increase the vertical clearance between the track and the trolley wire near the No. 117 block on the Main North Track Haulage. Mock and Ice were removing a roof bolt and wooden plank, which were initially installed as permanent roof supports when the area was mined.

The accident was caused by the failure to install additional support before load-bearing primary roof support was removed; management's failure to assure persons removing roof support were located in a safe position; management's failure to provide a management personnel to supervise the removal of roof support; management's failure to examine the roof conditions before permanent support was removed; and management's failure to provide task training instructing miners in the safe working procedures of removing permanent roof support and the safety and health aspects of the task.

GENERAL INFORMATION

The Blackville No. 2 Mine, located near Wana, West Virginia, in the western end of Monongalia County, is an underground coal mine owned and operated by Consol Energy. The mine accesses the Pittsburgh No. 8 coal seam by two portals: the Wana Portal and the Kuhntown Portal located near Brave, Pennsylvania. Most miners enter the mine via elevator at the Kuhntown, Pennsylvania Portal and a limited number of miners enter the mine via the man and material hoist at the Wana Portal.

Coal is mined from the 78-inch coal seam by four continuous mining machine sections and one longwall section. The Blacksville No. 2 Mine employs 427 underground employees and 49 surface employees. The average production is approximately 11,000 tons per day. The mine typically operates eight hour shifts, three shifts a day, and six days a week. The mine is ventilated with five main mine fans and one bleeder fan. Maintenance is conducted as needed. Coal is transported from active workings to the Wana Portal Bottom by a conveyor belt system and then transferred onto a skip hoist and brought to the surface. Battery and trolley-powered, rail-mounted vehicles are used to transport supplies and mine personnel. The mine liberates approximately 5.4 million cubic feet of methane every 24 hours.

The principal officers at the time of the accident were:
James Gandy……...Superintendent
Terry Ramsey…….Assistant Superintendent
Scott DeVault……..Safety Supervisor

An MSHA Health and Safety Inspection (E01) was completed on June 28, 2012. Another E01 inspection was ongoing at the time of the accident. The Non-Fatal Days Lost (NFDL) incidence rate during the previous quarter for the mine was 3.17, compared to the national average of 3.48.

DESCRIPTION OF ACCIDENT

On Thursday, September 13, 2012, the day shift started at 8:00 A.M. William (Bill) Mock and Doug Ice Jr., General Inside Laborers, were assigned by Shift Foreman, Darrel Stewart, to repair the track at various locations along the Main North Haulage. Mock and Ice, along with Rocky Hartley, Supervisor Trainee, had worked together earlier in the week repairing track. However, Hartley was assigned other duties for this shift. Mock and Ice entered the mine shortly after 8:00 A.M., on the Kuhntown elevator. They travelled from the Kuhntown Portal bottom in the No. BT 24 trolley-powered jeep, to the No. 42 block of the Main North Haulage. Mock and Ice began their assigned activities of track repair work, including raising the track and repairing trolley wire hangers. This work was conducted mainly between blocks 42 and 47.

At approximately noon, Mock and Ice received a call over the trolley radio from Frank DeBardi, Dispatcher. Mock was told to call the mine dispatcher's office using the mine phone. Mock called and talked to Anthony (Tony) DiDomenico, Outby Supervisor. DiDomenico instructed Mock to address a roof bolt and plank in close proximity to the trolley wire on the 117 side of 116 block (see Appendix No. 1). Mock was also instructed to wait until later in the shift because the trolley wire would have to be de-energized, which would prevent travel between Main North Junction and the Wana Portal. During the accident investigation interviews, DiDomenico stated he had been in the area the day before when he noticed the roof bolt and plank were getting too close to the trolley wire. The investigation revealed the area had not been identified during a pre-shift examination of the area and the condition was not recorded as a hazard or violation.

Mock and Ice continued their work between 42 and 47 blocks. Mock requested clearance from DeBardi to travel from the 42 block area to the 116 block area, sometime after 2:00 P.M. At approximately 3:00 P.M., Mock requested clearance

to travel back to the Main North Junction track switch (approximately 125 block) to allow a supply trip to pass. After the trip passed, Mock requested and was given clearance to travel back to the 116 block.

Ice stated that when he and Mock arrived at the 117 block area, they noticed a ribbon on the walkway side of the entry (the side opposite the trolley wire). Mock and Ice cut off an exposed roof bolt, removed the attached plank and placed it in the crosscut at 117 block. They observed another plank that needed to be removed, but their jeep was in the way. The jeep was moved a few feet towards the Wana bottom and Mock started to cut the plank using a reciprocating saw. The plank was cut approximately half-way when they determined it was taking weight from the mine roof. Mock stopped cutting the board. A portion of a roof bolt supporting the board was exposed due to sloughing of roof material. Mock and Ice decided to cut the roof bolt with a track bonder. To avoid being exposed to a flash from the bonder, Ice turned his back. When the bolt was burned through, there was a loud "pop," causing Ice to duck. When Ice turned back around, he saw Mock covered with a rock from the lower chest down. Ice stated that he tried to move the rock, but was unable to do so. Ice felt for a pulse from Mock, but none was detected. Ice immediately radioed to DeBardi that a miner was down and requested assistance. DeBardi sent two groups of miners, including Emergency Medical Technicians (EMT's) from the Kuhntown bottom to the accident site to assist. Another group of miners was instructed to obtain the Automated External Defibrillator (AED) from the motor barn and go to the accident site. DeBardi phoned for an ambulance and called for anyone at the Kuhntown bottom to clear up the track from the K-3 area to the elevator. DeBardi then informed John Davis, Shift Foreman, of the accident.

After contacting DeBardi, Ice had gone to the back of the jeep, obtained a jack, and attempted to lift the fallen rock off Mock; however, he was unsuccessful in freeing the victim. Ice again called DeBardi by mine phone and informed him of the seriousness of the accident and asked if help was coming.

When assistance arrived at the accident site, Mock was checked for vital signs, but none were detected. To remove the victim from under the rock a jack and come-along were used to lift the rock. After removing the victim from under the rock, he was placed on a backboard, loaded into one of the mobiles, and transported to the Kuhntown bottom. Rescuers placed Mock in the elevator and accompanied him to the surface. The Mon County EMS Service transported Mock to the Waynesburg Hospital, where he was pronounced dead upon arrival.

INVESTIGATION OF THE ACCIDENT

On September 13, 2012, at approximately 3:40 P.M., Jan Lyall, Mine Safety and Health Specialist (Roof Control), was working afternoon shift and arrived at the mine. Upon his arrival, Lyall was notified by Jim Wolfe, Mine Mentor, of the details of the accident. Lyall issued a 103(k) Order and phoned Bob Cornett, MSHA District 3 Manager, informing him of the accident. The mine operator phoned the MSHA Emergency Hotline at 3:46 P.M., who notified Ronald Tulanowski, Assistant District Manager of Enforcement. Lyall was assigned to investigate the accident and Jeff Maxwell, Coal Mine Safety and Health Specialist (Electrical) was sent to assist.

The investigation was conducted in conjunction with the West Virginia Office of Miners Health, Safety and Training, Consol Energy, and the United Mine Workers of America (UMWA). Prior to traveling underground, the accident investigation team was briefed regarding the circumstances of the accident. Preliminary interviews were conducted with miners who had knowledge of the accident. The investigation team then travelled from the Kuhntown Portal to the accident site. The area had been "dangered off." The team immediately determined additional safety precautions were necessary to assure the safety of the investigation team. Observation of the site was made and photos of the scene were taken from the 117 block side. Overnight, additional roof support was installed and initial mapping of the area was done. The accident investigation team assembled the following morning and conducted preliminary interviews with other miners having knowledge of the accident. The team returned to the accident site to continue the investigation, obtain measurements, map the area, and obtain additional photographs.

On Monday, September 17, 2012, and September 20, 2012, formal interviews were conducted at the MSHA District 3 Office in Morgantown, West Virginia. A representative of the victim's family was present during the interviews.

DISCUSSION

Accident Location

The accident occurred on the 117 side of No. 116 block of the Main North Haulage in the track entry, which was developed in March of 1977. This location is approximately two miles from the Kuhntown Portal which is near the mid-point between the portals. The area was mined utilizing a Martin Marietta, twin-borer continuous mining machine. The width of the entry, when developed, was less than 14 feet. Continuous mining machines with a bore-type cutting head

leave an arched area in the rib and the roof. In this instance, the result was the arch exhibiting lesser signs of taking weight and minimal sloughing. Primary roof support installed during development was a three-part system, consisting of two 9-foot long, 5/8 inch diameter, mechanically-anchored roof bolts. The bolts were installed through wooden planks, 6 feet long and 2 inches thick. The bolts were spaced a maximum of 48 inches apart, with the maximum distance of 5 feet between each plank.

As a mining practice, the mine operator insulated the immediate mine roof rock by leaving "head coal" at least 4 inches thick. In the area near the accident site, when mined originally, the head coal was found to be approximately 10 inches thick, but due to weathering, most of the head coal had sloughed away, leaving the roof rock exposed. To complete the mining cycle, additional height was obtained in the track entry by blasting the floor. Prior to blasting, truss bolts on 5-foot spacing were installed throughout the area. Because of the long term sloughing of head coal, the truss bolts installed initially became ineffective and provided little to no support. Consequently, most of the truss bolts had been removed.

Fallen Roof Material

The rock field at the accident site was in two large sections, measuring approximately 137 inches long, up to 44 inches wide and ranged from 4 to 11 inches thick. The approximate weight of the fallen rock was 3,000 pounds.

Temporary Support

Interviews revealed roof bolts and roof planks were removed from the Main North Track Haulage on previous occasions. Persons interviewed stated the mine had two track-mounted roof bolting machines which were utilized to install roof bolts. One track bolter was located at the Wana Portal and the other track bolter was located at the Kuhntown Portal. The track bolter kept at the Kuhntown Portal was unavailable when the accident occurred due to maintenance issues. Additional roof support was not installed before removing load bearing support when the accident occurred.

Training Records and Experience

The victim had over 30 years of underground mining experience. Interviews revealed the victim had previously removed permanent roof support along the Main North Track Haulage. Interviews further revealed that on previous occasions, the victim either installed floor to roof support or requested the area to be "spot" bolted with additional roof bolts.

A review was conducted of the training records for Mock and Ice, who were the miners assigned to remove permanent roof support along the North Mains Haulage where the fall of roof accident occurred. The requisite Annual Refresher training was current for Mock and Ice.

The review revealed the mine operator did not provide Ice with task training for the task of removing permanent roof support. A citation was issued to the mine operator for this violation. The review also revealed that the mine operator was unable to provide a record of task training for Mock. A citation that was non-contributory to the accident was issued to the mine operator for not providing this training record.

Supervision and Work Direction

Management personnel were not present when the accident occurred. No member of mine management was with Mock and Ice during the entire shift, including the removal of the load bearing support.

The accident occurred with approximately 30 minutes remaining in the shift for Mock and Ice. It takes at least 15 minutes to travel from the accident site to the Kuhntown Portal.

Examinations

A pre-shift examination had been conducted through the area where the accident occurred, shortly before the accident (between 1:00 P.M., and 3:00 P.M., according to the pre-shift book). The exam started at the Wana Portal and concluded at the Kuhntown Portal, a distance of approximately four miles. There are 71 areas where the examiner is required to stop along the Main North Track Haulage. These areas include pumps, electrical installations, and two intake seals located several blocks off the track entry. The examination is conducted by a certified person riding in a track-mounted jeep.

Prior to the accident, there were no locations reported or identified where additional roof support was necessary, roof needed to be scaled, or other roof related hazards. The area where the victim was required to remove the plank was not identified as a hazard or a violation. Initially, the entire haulageway was a part of the affected area of the 103(k) Order issued as a result of the accident. Modification of the 103(k) Order required the mine operator to examine this area "on foot." As a result of the examination, the pre-shift exam record indicated that additional roof support or roof scaling was necessary in 137 locations. A

citation that did not contribute to the accident was issued for an inadequate pre-shift examination.

Equipment

Mock and Ice were provided with a rail-mounted trolley jeep, BT #24 mobile, which was equipped with a 200 amp, Goodman bonder. The bonder was energized from the jeep batteries.

Identification and Communication of Work to be performed

Identification of the specific problem area that Mock and Ice were asked to correct was not marked or otherwise identified. There were four streamers (ribbons) in the area, which were present for some length of time as they were coated in rock dust. It is unclear when the ribbons were placed or the reason for their placement. Mock and Ice were uncertain as to which roof bolts needed to be removed, since work was assigned during the shift by telephone and no supervisors were with them. The board closest to the trolley wire was cut at some point, as indicated by yellow paint remnants on the board resulting from a saw blade. Ice did not have any recollection of removing a portion of this particular board. Two shifts transpired from the time this board was identified and when the accident occurred. Workers from one of these shifts may have attempted to cut the board, but this was never determined and Ice could not recall. Positive identification of when the board was cut could not be made.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic causes of the accident that were correctable though reasonable management controls. During the analysis numerous root causes were identified that if eliminated would have either prevented the accident or mitigated its consequences.

Listed below are root causes identified during the analysis and their corresponding corrective actions being implemented to prevent a reoccurrence of the accident.

Root Cause

The mine operator's policies and administrative controls did not ensure that safe work policies and procedures were in place and that basic training was in place to instruct miners on the safe work policies and procedures and safety and health aspects for the task of removing permanent roof support.

Corrective action

The mine operator has developed written safe work instructions, which include training of specific policies procedures to be followed while completing the task that led to the occurrence of the accident. The affected miners were trained in the new policies and procedures.

Root Cause

The mine operator's policies and administrative controls did not ensure that persons removing roof support were supervised by management personnel. A management official should have been present, who was experienced in the removal of permanent roof support, to designate where the roof supports were to be removed, and to designate each support that was to be removed.

Corrective Action

The mine operator has developed written safe work instructions, which include assurance that a management person will be present during roof support removal. Management personnel were trained in the safe work procedures.

Root Cause

The mine operator did not ensure that prior to the removal of permanent roof supports, an examination of the roof conditions were conducted by a supervisor or certified examiner.

Corrective Action

The mine operator developed written safe instructions which include specific policies procedures by mine management personnel and examiners when roof support removal is being done. Supervisors were trained in the safe instructions.

Root Cause

The mine operator did not ensure that a row of temporary supports was installed prior to the removal of permanent roof supports and that the support be set as close as practical to the support being removed.

Corrective Action

The mine operator has developed written safe instructions, which include specific policies and procedures to install temporary supports in order to remove permanent roof supports. The affected miners were trained in the instructions.

CONCLUSION

The accident was caused by the failure to install additional support before load-bearing primary roof support was removed; management's failure to assure persons removing roof support were located in a safe position; management's failure to supervise the removal of roof support; management's failure to examine the roof conditions before permanent support was removed; and, management's failure to provide task training instructing miners in the safe working procedures of removing permanent roof support and the safety and health aspects of the task.

Bob E. Cornett
District Manager

4-2-2013
Date

ENFORCEMENT ACTIONS

Section 103 (k) Order No. 8026057, was issued September 13, 2012, to Consolidation Coal Company, Blackville No. 2 Mine: A fatal accident occurred when a fall of roof occurred along the Mains North Track. Two miners were attempting to increase the vertical clearance between the tack and the trolley wire by removing roof support when the accident occurred. This order is issued to protect the safety of the miners.

A 104 (a) Citation for a violation of 30 CFR, § 75.213(a)(1): On September 13, 2012, the operator failed to assure a member of mine management person supervised the removal of permanent roof support. The removal of the support resulted in a fatal accident when a large piece of rock fell on the victim who had just cut a bolt with a bonder. The bolt was part of a three part system consisting of two 9 foot conventional roof bolts installed though a two inch wooden plank. The accident occurred at approximately 3:30 pm near the 117 block of the North Mains Haulage. Witness interviews reveled that before the bolt was cut an attempt to cut the plank was made but it showed signs of taking weight so they cut the bolt first. A supervisor must be available to address any unusual circumstances that may arise and to direct all phases of roof support removal.

A 104 (a) Citation for a violation of 30 CFR, § 75.213(b): A supervisor did not make an examination of the roof conditions in the area prior to removal of the support nor was each roof support removed specific by a management person before the support was removed. On September 13, 2012, at approximately 3:30 P.M., a fatal accident occurred when a miner removed permanent roof support by cutting a roof bolt with a bonder. The bolt was one part of a three part system consistent of two 9-foot bolts installed on each end of a 2 inch thick wooden plank. The accident occurred near the 117 block on the North Mains Haulage. During interviews, a supervisor stated that the day before the accident he observed a bolt getting close to the trolley wire and had sent the crew to remove the support. He also stated he had not marked the support to be removed nor had he recorded the condition in the any book. During the investigation at least four ribbons (markings) were observed in the area, including one on the plank causing the accident. All four ribbons appeared to have been in place for several days since they were cover with dust. The investigation also revived that at least five bolts had been recently cut at the accident site. None of the bolts had been replaced nor was any temporary support been installed.

A 104 (a) Citation for a violation of 30 CFR § 75.213(c)(2): On September 13, 2012, temporary support was not installed prior to the removal of permanent roof support at 117 block of the North Mains Haulage. At approximately 3:30 P.M., a fatal accident occurred when a large piece of roof rock fell pinning a miner on the floor. The victim was in the process of cutting a roof bolt with a bonder. The bolt was a part of a 3 part system consisting of two 9-foot conventional bolts installed though a 2 inch wooden plank. Temporary support shall be installed as close as practicable to each roof bolt being removed to prevent being exposed to unsupported roof during removal. Neither temporary nor permanent supports were provided or available at the accident site or on the jeep used by the two man crew assigned to do roof support removal.

A 104 (a) Citation for a violation of 30 CFR, § 75.213 (f)(3): Permanent roof support was removed after indications of the roof being structurally weak. The removal of the support resulted in a fatal accident on September 13, 2012, when a large portion of rock fell from the roof on a miner. The accident occurred near the 117 block of the North Mains Haulage when the miner cut a roof bolt which was part of a three part system consisting of two 9-foot conventional bolts installed in a wooden plank. Interviews revealed the victim first attempted to cut the plank using a reciprocating saw. Half-way though the board the roof showed signs of taking weight and he proceeded to cut the bolt in an attempt to relieve pressure from the board.

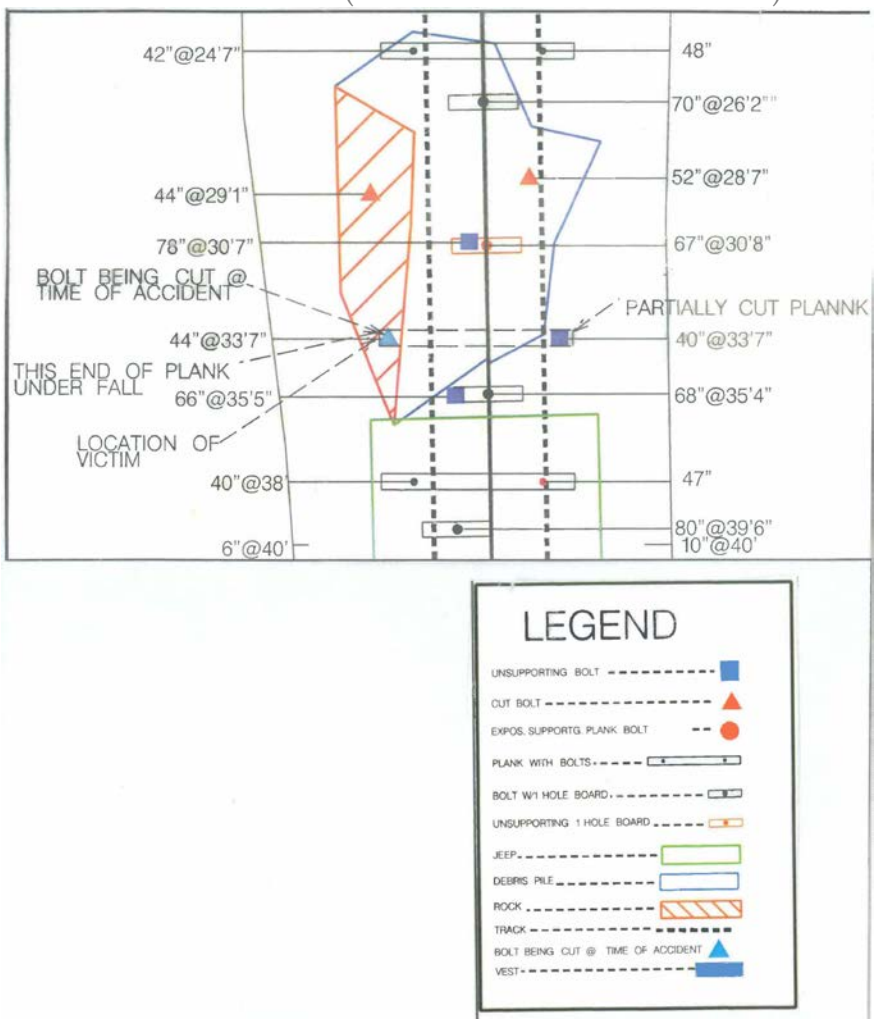
A 104 (a) Citation for a violation of 30 CFR, § 75.202(a): The mine roof was not adequately supported or otherwise controlled at the 117 block of the North Mains Haulage. On September 13, 2012, a fall of roof accident occurred resulting in fatal injuries. The fallen material measured approximately 137 inches long, 44 inches wide, and 4 to 11 inches thick. The victim and another miner were in the process of removing permanent roof support at the time of the accident. A plank with two bolts had also been removed. With both planks removed an area between the rib (trolley side) and middle of the entry is left without any support. Also, in this area from middle of the entry to the other rib was not supported. No attempt was made to install new bolts or to add temporary support before cutting the bolts. The entrance to the area was not provided with a warning sign or physical barrier to block entrance to the area.

A 104 (a) Citation for a violation of 30 CFR, § 48.9(a) A record of training for the task of removing roof support could not be produced by the company for the victim of the accident which occurred on September 13, 2012. At the time of the accident the victim was removing permanent support when a large portion of rock fell from the roof resulting in fatal injuries.

A 104 (a) Citation for a violation of 30 CFR, § 48.7(c): The company did not provide training to Douglass Ice Jr., for the task of removing roof support. On September 13, 2012, this miner was part of a two man crew assigned to the removal of roof support along the North Mains Haulage when a fall of roof accident occur resulted in fatal injuries to his co-worker.

APPENDIX I
SCHEMATIC OF THE ACCIDENT SCENE

117 BLOCK SIDE (TOWARDS WANA PORTAL)



116 BLOCK SIDE (TOWARDS KUHNTOWN PORTAL)

APPENDIX II
VICTIM INFORMATION

Accident Investigation Data - Victim Information

Event Number: 6 2 6 4 8 3 4

U.S. Department of Labor
Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Degree of Injury:
William E. Mock	*M*	*61*	*01 Fatal*

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 09/13/2012 b.Time: 15:46	*a. Date: 09/13/2012 b. Time: 8:00*

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
116 Laborer/utility man/bull gang	*078 Roof bolter, removing bolt*	Yes X No

10. Experience:	a. This Work Activity:	b. Regular Job Title:	c: This Mine:	d. Total Mining:
Years	*5*	*5*	*5*	*38*
Weeks	*2*	*2*	*2*	*40*
Days	*4*	*4*	*4*	*0*

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
121 Back mine roof, hanging wall	*170 Crushing*

13. Training Deficiencies:

Hazard: | New/Newly-Employed Experienced Miner: | Annual: | Task: X

14. Company of Employment: (If different from production operator)

Operator

Independent Contractor ID: (if applicable)

15. On-site Emergency Medical Treatment:

Not Applicable: | First-Aid: X | CPR: | EMT: X | Medical Professional: | None:

16. Part 50 Document Control Number: (form 7000-1) *220122690002*

17. Union Affiliation of Victim: *2555* *United Mine Workers of Amer.*

APPENDIX III
Persons Particiapting In The Accident Investigation

MINING COMPANY OFFICIALS

William "Scott" DeVault	Safety Supervisor
Rocky Hartley	Supervisor Trainee
Rick Marlowe	Director of Safety Awareness
Todd Moore	Director of Safety Coal Operations

WEST VIRGINIA OFFICE of MINERS' HEALTH, SAFETY, and TRAINING (WVMHST)

Ed Peddicord	Inspector at Large
John Meadows	Assistant Inspector at Large
Jeff Bennett	District Inspector
Barry Fletcher	District Inspector
James Stuckey	District Inspector

MINE SAFETY and HEALTH ADMINISTRATION

Greg Fetty	Staff Assistant, District 3
Jan B. Lyall	CMS&H Specialist (Roof-Control)
Mike Kelley	Supervisory, Roof-Control

UNITED MINE WORKERS OF AMERICA

Ron Bowersox	International Safety Committee
Mike Caputo	VP of District Safety Committee
Raymond Copeland, Jr.	VP of Local Safety Committee
Eric Greathouse	President of Local Safety Committee

LIST OF PERSONS INTERVIEWED

Frank DeBardi	Dispatcher
Anthony "Tony" DiDomenico	Outby Supervisor
Doug Ice, Jr.	General Inside Labor
Brandon McDonald	Mine Examiner
Timothy H. Wilson	Safety Committee