

UNITED STATES  
DEPARTMENT OF LABOR  
MINE SAFETY AND HEALTH ADMINISTRATION  
COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION  
Underground Coal Mine

FALL OF ROOF/RIB  
June 16, 2010

Clover Fork No. 1  
Lone Mountain Processing Inc.  
Holmes Mill, Harlan County, Kentucky  
ID No. 15-18647

Accident Investigators

John C. Boylen  
Roof Control Specialist, District 7

James A. Lundy  
Health Specialist, District 7

William J. Gray  
Mining Engineer, Technical Support

Alice Blanton  
Educational Field Services Training Specialist

Originating Office  
Mine Safety and Health Administration  
District 7  
3837 S U.S. Hwy 25E  
Barbourville, KY 40906  
Irvin T. Hooker, District Manager

## TABLE OF CONTENTS

Overview .....	1
General Information .....	1
Description of Accident.....	2
Investigation of the Accident .....	3
Discussion .....	3
Pillar Stability.....	4
Examination of 001 Section / MMU.....	4
Training.....	5
Root Cause Analysis.....	5
Conclusion .....	7
Enforcement Actions .....	8
Appendices:	
Appendix A - Persons Participating in the Investigation.....	13
Appendix B - List of Persons Interviewed.....	14
Appendix C - Sketches of accident scene.....	15
Appendix D- Photograph of accident scene.....	17
Appendix E - 7000-50b.....	18

## OVERVIEW

On Wednesday, June 16, 2010, at approximately 3:43 p.m., a 42 year old Section Foreman with 17 years mining experience, including 11 years as a Section Foreman, was killed when a portion of rib fell, dislodging a roof jack, which struck the victim in the head. The victim and several crew members were standing in an intersection discussing control measures for the left inby rib corner, which had fallen into the roadway. While the discussion was occurring, a portion of rib fell from the right outby corner, dislodging two of the three roof jacks that had been installed to limit the entry width where the corner had previously fallen out. One of the roof jacks dislodged by the fallen rib fell and struck the victim, resulting in fatal injuries. The fallen rib measured approximately 12 feet wide, 15 ½ feet high and 9 feet thick.

## GENERAL INFORMATION

The Clover Fork No. 1 Mine is an underground coal mine owned and operated by Lone Mountain Processing Inc., a subsidiary of Arch Coal Inc. The mine is located in Harlan County, Kentucky near the town of Holmes Mill. Mining height is approximately 5½ feet when mining the Owl seam only and increases to approximately 16 feet with the inclusion of the underlying Darby seam and approximately 36 inches of rock which separates the two seams. The mine is accessed by three drift openings and produces an average of 7,000 raw tons daily. Three continuous mining units operate two shifts per day using the room-and-pillar and retreat mining methods. Maintenance is performed on the third shift. Employment is provided for 126 miners underground and two on the surface. Miners and supplies are transported underground using rubber-tired diesel vehicles. Coal is transported from the working places to the section loading point by shuttle cars, then to the surface by belt conveyor.

The mine is ventilated via a blowing fan at the drift opening. The mine is in a 15 day 103(i) spot inspection status. The total methane liberation samples, taken on June 23, 2010, indicated the mine was liberating 416,646 cubic feet of methane in 24 hours.

The principal officials for the mine at the time of the accident were:

Thurman Holcomb .....	General Manager
Arnold Hammons .....	Mine Manager
David Webb .....	General Mine Foreman
Wilburn (Buddy) Howard .....	Safety Director

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection of the mine on March 31, 2010 and another was on-going at the

time of the accident. The Non-Fatal Days Lost (NFDL) injury incidence rate for the mine in 2009 was 2.01 compared to a National NFDL rate of 4.04.

## DISCRIPTION OF THE ACCIDENT

On Wednesday June 16, 2010 at approximately 3:00 p.m., six members of the afternoon production crew of the 001 Section under the direction of Jimmy R. Carmack, Section Foreman, entered the mine via rubber tired diesel mantrip. The crew arrived on the section at approximately 3:30 p.m. and completed the "hot seat" change out with the dayshift crew. According to Jay Partin III, Roof Bolter/Mobile Roof Support Operator, Carmack (victim) checked the No. 1 Entry and directed the Continuous Miner Operator, Justin Guthrie to mine the barrier block left of the No. 1 Entry. At the time of the accident, the section was retreat mining.

The first shuttle car of coal could not be transported to the dumping point because the left inby rib corner of the No. 2 intersection had fallen out, blocking the shuttle car roadway in the crosscut toward the No. 1 entry. Carmack directed Ryan Daniels, Scoop Operator, to bring the scoop and remove the fallen material from the roadway. The continuous mining machine could then be used to remove the remainder of the loose rib.

Carmack was standing in the intersection of the No. 2 Entry discussing corrective measures for the area of fallen rib material, located at the left inby corner rib, with crew members: Guthrie; Partin; Donnie Taylor, Shuttle Car Operator; Daniels; and Forest Evan Carroll, Shuttle Car Operator. During their discussion, the right outby rib corner fell, dislodging two large Heintzmann roof jacks. One of the dislodged jacks struck Carmack in the head, causing fatal injuries.

Partin went to Carmack as soon as the dust from the falling rib had cleared, but could not detect a pulse or other signs of life. Carmack was placed on a long spine board, loaded onto a personnel carrier and transported to the surface where he was pronounced dead by Philip Bianchi, Harlan County Coroner, at 6:20 p.m.

## INVESTIGATION OF THE ACCIDENT

The MSHA National Call Center was notified on June 16, 2010 at 3:52 p.m. by Wilburn Howard that a rib roll had occurred, with one man sustaining serious injuries at the time of notification. MSHA District 7 was notified by the National Call Center at 3:53 p.m. the same day. A verbal 103(j) Order was issued by Robert W. Rhea, Harlan Field Office Supervisor, at approximately 4:08 p.m. Dennis Cotton, District 7 Staff Assistant, dispatched John Boylen, MSHA Accident Investigator, to the mine site. The 103(j) Order was modified to a 103(k) Order after MSHA arrived on the mine site.

The accident investigation was conducted in cooperation with the Kentucky Office of Mine Safety and Licensing (KOMSL), with assistance from the mine operator and employees. A list of persons participating in or present during the investigation is included in Appendix A.

Representatives of MSHA, KOMSL, and the Mine Operator traveled underground to the accident site to examine the scene and begin an investigation of the existing physical conditions.

Interviews were conducted with 12 miners on June 17, 2010 at the KOMSL office in Harlan, Kentucky. A list of persons interviewed is included in Appendix B.

## DISCUSSION

At the time of the accident, the 001 Section was retreat mining in the coal barrier to the left of the No. 1 Entry. The section was developed utilizing a continuous mining machine and shuttle cars with 5 entries driven on 130 feet by 130 feet centers (See Map Appendix C). Four mobile roof supports (MRS) were being used during retreat mining.

Mining height throughout the 001 Section consistently measured in excess of 15 feet, with 16 feet measured in the intersection where the accident occurred. The mining height was achieved by mining both the Owl coal seam (approximately 60 inches) and the Darby coal seam (approximately 80 inches), along with a rock interburden of approximately 36 inches. The Roof Control Plan required a minimum of 2 rows of mechanical roof bolts for rib support, with 9-inch, by 9-inch bearing plates installed on 8 foot centers. The primary roof support was five-foot long, Hi-tech roof bolts, with supplemental eight-foot minimum length cable bolts. The plan allowed for 20-foot wide entries, with pillar corners reduced 4 feet, by 4 feet for haulage clearance.

The rib of the right outby corner at survey station No. 2660 had fallen out prior to the accident and three Heintzmann 50-ton roof jacks were installed to limit excess intersection width caused by the fallen rib.

During the accident, two of the Heintzmann jacks were dislodged by the falling rib. The metal bearing plate on top of one of the jacks (approximately 8 inches by 8 inches and 3/8 inches thick) struck Carmack in the head. The top of the jack had been attached to a roof bolt bearing plate with a chain and a 1/4 inch clevis. The clevis broke, allowing the jack to fall and strike the victim.

A portion of the rock parting (separation) between the two coal seams came to rest on the fallen jack. This piece of rock measured approximately 62 inches in length, by 52 inches wide, and varied in thickness from 10 inches, up to twenty 20 inches.

#### PILLAR STABLILITY

The global pillar stability of the 4 North Mains area was evaluated and analyzed by the District 7 Technical Division – Roof Control Branch prior to granting approval to retreat mine this area. In-mine investigations were conducted by the Roof Control Branch to verify the measurements and parameters submitted by the Operator and the data was forwarded to and evaluated by MSHA Pittsburgh Technical Support (PTS) prior to mining being approved by the District Manager. The depth of cover in this area was approximately 1762 feet. In-mine global pillar stability was 0.80, based on an Analysis of Retreat Mining Pillar Stability (ARMPS) and confirmed by PTS as meeting or exceeding the National Institute for Occupational Safety and Health (NIOSH) recommendation for pillar stability in the area being mined. No other pillar stability studies were conducted by the Mine Operator.

#### EXAMINATIONS ON THE 001 SECTION/MMU

In the previous 26 shifts on the 001 Section, the record of the Pre-shift/On-shift examination recorded “draw rock/loose ribs” at all five pillars for each of the 26 shifts, with corrective actions recorded in the examination book as “Strapped and Pulled.” There were no specific hazardous conditions noted or specific locations noted in the examination record. During the accident investigation interview, the Dayshift Foreman stated that although he noted “draw rock/loose ribs” ten times in the examination record of June 16, 2010, he did not have metal support straps installed and did not take down any loose ribs or draw rock where miners were exposed to danger on the day of the fatal accident.

An examination was made of the 001 Section during the investigation of the fatality. There were obvious and extensive hazardous conditions noted in all five entries of the retreating section. Numerous loose and dangerous ribs were present at various locations in the immediate working area where miners were required to work and travel. Several of these ribs had previously fallen and the fallen material cleaned up by the Mine Operator, with no additional rib support installed. Also, no additional support was installed at locations where rib separation was apparent and noticeably hazardous, putting miners in obvious danger of serious injury or death. Several ribs were fractured and unstable because parts of the ribs had fallen off, exposing the bearing plates and rib bolts, rendering them ineffective and of no value.

Based on the pressure exerted on the coal pillars by the mine roof, it was apparent that adequate Pre-shift and/or On-shift Examinations had not been conducted for multiple shifts prior to the accident. Miners had been directed to work and travel in these areas without the hazardous conditions being noted in the examination record, corrected, or posted with a conspicuous danger sign where anyone entering the areas would pass.

## TRAINING

A representative of MSHA's Educational Field Services (EFS) reviewed company training records on June 17, 2010. A determination was made that training records for the victim were current and no training violations existed.

## ROOT CAUSE ANALYSIS

An analysis was conducted to identify the underlying cause(s) of the accident that were correctable through reasonable management controls. Listed below are root causes identified during the analysis and the corresponding corrective action implemented to prevent a recurrence of the accident.

1. *Root Cause:* Management failed to provide adequate support for the right outby rib in the No. 2 Entry at survey station No. 2660.

*Corrective Action:* Prior to any other mining in the 4 North Panel, a rehabilitation plan was submitted by the Mine Operator, detailing how the area would be rehabilitated, in phases, to protect the miners. The affected area was provided with additional support. Comprehensive and systematic rib control measures have been made part of the Roof Control Plan.

2. *Root Cause:* An inadequate pre-shift examination was conducted by the Day Shift Section Foreman. Obvious adverse rib conditions existed in several locations on

the 001 Section. The foreman failed to either recognize or take appropriate actions to correct conditions during the work place examination. The hazardous conditions noted in the record were non specific and did not alert miners of the dangers that existed.

*Corrective Action:* The Operator has conducted training classes with all Foremen on conducting and recording a proper pre-shift examination. A record of the training was made by the Operator.

3. *Root Cause:* An inadequate on-shift examination was conducted by the Section Foreman. Obvious adverse rib conditions existed in several locations on the 001 Section. The Foreman failed to either recognize or take appropriate actions to correct conditions during the work place examination. The hazardous conditions noted in the record were non specific did not alert miners of the dangers that existed.

*Corrective Action:* The Operator has conducted training classes with all Foremen on conducting and recording a proper on-shift examination. A record of the training was made by the operator.

4. *Root Cause:* The Operator failed to revise the Roof Control Plan when obvious conditions indicated the plan was no longer suitable for controlling the roof, face, ribs, or coal or rock bursts.

*Corrective Action:* The Operator has developed and submitted a revision to the current Roof Control Plan addressing additional rib control measures, which has been approved by MSHA. The rib support plan was revised according to recommendations from MSHA Pittsburgh Technical Support. In addition, all employees received training concerning the Roof Control Plan revision. A record of the training was made by the Operator.

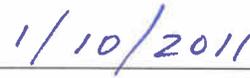
## CONCLUSION

This fatal accident occurred because the Operator failed to provide adequate support for the ribs on the 001 Section to protect the miners. Additionally, the Operator failed to conduct adequate pre-shift and on-shift examinations and ignored the hazardous rib conditions on the 001 Section. The Operator failed to propose changes to the Roof Control Plan to address the adverse conditions on the 001 Section when those conditions indicated the plan was not suitable for controlling the ribs.

APPRROVED BY:



Irvin T. Hooker, District Manager



Date

## ENFORCEMENT ACTIONS

Order No. 8347228 was issued verbally to Lone Mountain Processing Inc, Clover Fork No. 1 Mine on June 16, 2010 at 16:08 hrs. under Section 103(j) of the Mine Act and modified to a 103(k) Order at 17:02 hrs. the same day.

104(d)(1) Citation, No. 8403819, was issued for a violation of 30 CFR § 75.202(a).

The roof, face, and ribs of areas where persons work or travel were not supported or otherwise controlled to protect persons from hazards related to falls of the roof, face or ribs. The outby right rib corner of the pillar in the No. 2 Entry intersection at survey station #2660, located on the 001 Section, fell at approximately 3:43 p.m. on June 16, 2010, dislodging a Heintzmann jack that struck a miner in the head, causing fatal injuries. The height in this intersection measured sixteen (16) feet. A portion of this rib corner had previously fallen out and had been cleaned up, but additional rib support had not been installed. Section Foreman Bill Wilson stated on June 17, 2010, that at least a week prior to the fatal accident, his crew had reset one of the three (3) Heintzman jacks that had been installed to reduce the width to a maximum of twenty (20) feet because it had been knocked out by a piece of diesel equipment.

Therefore, the Operator had reason to know that the unstable rib had not been supported.

This constitutes more than ordinary negligence and is unwarrantable failure to comply with a mandatory standard.

This standard was cited 46 times in two years at this mine.

104(d)(1) Order, No. 8403823, was issued for violation of 30 CFR § 75.360(b)(3).

The Operator failed to conduct an adequate pre-shift examination on June 16, 2010, for the on coming afternoon shift on the 001 Section. In the #2 intersection, at survey station #2660, the outby right corner of the pillar fell, dislodging a Heintzman Jack that struck a miner in the head, causing fatal injuries. The height in this intersection measured sixteen (16) feet. The accident investigation revealed that a portion of the corner had previously fallen and had been cleaned up, but additional support had not been installed. The excessive width of this area had been reduced to the required minimum of twenty (20) feet by the installation of three (3) Heintzman jacks. It was also discovered that this unsupported pillar corner had existed for at least a week prior to the accident

and the condition was not recorded in the preshift record book and was not posted with a conspicuous danger sign to warn miners of the danger.

In addition to the conditions that contributed to the fatal accident of June 16, 2010, the following conditions were also present on the 001 Section that should have been noted during the pre-shift and were not:

No. 5 entry (survey station #2663) - The height in this intersection measured 15 ½ feet.

- The left inby corner of the pillar had previously fallen out, had been cleaned up, and no additional rib support had been installed. This area measured approximately 8 feet by 16 feet. There were several cracks present indicating this corner would fall without warning.
- The left outby corner of the pillar at the same location was fractured and the rib bolt located near the roof was loose and ineffective.
- One break outby survey station #2663, the inby left corner of the pillar had fallen out. The fall had been cleaned up, but not re-supported. The remaining rib was loose and hanging with a rib bolt broken and ineffective.

No. 4 Entry (survey station #2261) - Height in this intersection measured 14 feet.

- The left outby corner of the pillar was loose and hanging with 3 rib bolts having loose bearing plates, which were ineffective.
- The left inby corner of the pillar at the same location had previously fallen out and had been cleaned up. The ribs were loose and hanging with 7 rib bolts exposed and ineffective. This distance was approximately 40 feet long.
- The right inby corner of the pillar at the same location had rolled out with four bolts exposed and ineffective. There was a loose rib in the cross cut toward the No. 5 Entry approximately 12 feet long and 3 feet, up to 8 feet thick.

At one (1) crosscut outby survey station #2663, the height measured 13 feet 2 inches.

- The right inby corner of the pillar was loose and hanging with 3 rib bolts loose and ineffective and one rib bolt had been sheared off. Several cracks in the ribs were present in this area. This rib would fall with out warning.
- The left inby corner at this location has a loose rib 26 inches thick, 17 feet wide, with 4 of the 7 rib bolts loose and ineffective.
- The right outby corner at this location had 3 separations in a 4 feet thick by 10 feet rib, running from roof to floor with one loose and ineffective rib bolt for the entire rib.

No. 3 Entry intersection (between survey station #2660 and survey station #2661)  
- Height in the intersection measured 14 feet 8 inches.

- The right inby corner of the pillar was loose and hanging with 2 rib bolts exposed. One rib bolt had a loose bearing plate and one rib bolt sheared off, rendering all four bolts ineffective. This loose rib was 55 inches thick and extending into the No. 3 Entry, for a distance of 113 inches.
- Left inby corner of the pillar at same location; a rib approximately 10 feet by 10 feet had partially fallen out leaving 5 rib bolts exposed and ineffective.

One crosscut outby survey station #2660 - The height in this intersection measured 14 feet.

- The left inby corner rib was loose and hanging with 5 rib bolts exposed and ineffective. Several separations were in the rib from roof to floor. Portions of the rib had fallen out into the roadway. Timbers had been set in the fallen out area to reduce the width by evidence of the lack of rock dust on the roof, but the rib had not been re-supported.
- The right outby corner rib of the same area had fallen out and had been cleaned up, but not re-supported and it fell out again. The rib was still loose and hanging and would fall with very little or no warning. The loose rib was 8 inches, to 10 inches thick and 4 feet, to 6 feet long.

No. 1 Entry (survey station #2664)

- The right outby corner of the pillar had fallen out and been partially re-supported with rib bolts but additional falls had left the bolts ineffective.

Miners had been directed to work and travel in these areas without the hazardous conditions being noted in the examination record, corrected, or posted with a conspicuous danger sign where anyone entering the areas would pass. These hazardous conditions had existed for several shifts and were obvious to the casual observer.

The Operator has engaged in aggravated conduct, constituting more than ordinary negligence, in that upon inspection of the pre-shift exam book, none of these hazardous conditions were recorded in the 001 Section exam book. This violation is an unwarrantable failure to comply with a mandatory standard.

104(d)(1) Order, No. 8403824, was issued for violation of 30 CFR § 75.362(a)(1).

During the course of MSHA's Accident Investigation, it was found that adequate on-shift examinations were not performed for several shifts prior to the fatal accident that occurred on the 001 MMU/Section at approximately 3:43 p.m. on June 16, 2010. In the #2 intersection, at survey station #2660, the outby right corner of the pillar fell, dislodging a Heintzmann jack that struck a miner in the head causing fatal injuries. The height in this intersection measured sixteen

feet. The Accident Investigation revealed that a portion of the corner had previously fallen and had been cleaned up, but additional support rib support had not been installed. The excessive width of this area had been reduced to the required minimum of twenty (20) feet by the installation of three (3) Heintzmann jacks. It was also discovered that this unsupported pillar corner had existed for at least a week prior to the accident and the condition was not recorded in the on shift record book and was not posted with a conspicuous danger sign to warn miners of the danger.

In addition to the conditions that contributed to the fatal accident of June 16, 2010, the following conditions were also present on the 001 Section, which should have been noted during the on-shift examination and were not:

In the No. 5 Entry one crosscut outby survey station No. 2663, the left corner rib had previously fallen out and been cleaned up, but not re-supported. The inby rib in the crosscut from No. 5 Entry to No. 4 Entry at the same location was loose and hanging with a rib bolt plate loose and ineffective.

In the No. 4 Entry, 1 crosscut outby survey station No. 2661, the right inby rib in crosscut from No. 4 Entry to No. 5 Entry had several cracks with a rib bolt sheared off. The left inby corner rib at the same location was loose with 4 of the 7 rib bolts loose and ineffective. The right outby corner has a loose rib with a rib bolt ineffective because 6 inches of the bolt was exposed. The No. 4 Intersection at survey stations No. 2661, left outby rib, was loose and hanging with 3 rib bolts loose and ineffective. The left inby corner rib at this location had previously fallen out, been cleaned up, and had 7 rib bolts exposed and ineffective. The right outby rib at the same location had fallen out leaving 4 rib bolts loose and ineffective with a large rib loose and unsupported.

At No. 3 Intersection between survey station No. 2660 and survey station No.2661: the right inby rib toward No. 4 Entry was loose and broken for a distance of 55 inches with a rib bolt exposed and ineffective. A loose, dangerous rib also extends into the No. 3 Entry at this location and had 2 rib bolts exposed and ineffective. The left inby rib was loose at this location and had partially fallen out. The rib was 10 feet by 10 feet with 5 rib bolts exposed and ineffective.

The No. 2 Entry at survey station No. 2660, also area of fatal accident: the right outby corner had fallen out and been cleaned up, but not re-supported. One crosscut outby survey station No. 2660, the left inby corner had fallen out, but still had loose and hanging ribs with 5 rib bolts exposed and had not been re-supported. The right outby corner rib at this same location had fallen out, been cleaned up but had not been re-supported.

These hazardous conditions had existed for several shifts and were obvious to the casual observer.

The Operator has engaged in aggravated conduct, constituting more than ordinary negligence, in that the hazardous rib conditions were not corrected when identified, which led to the exposure of the victim and other miners. This violation is an unwarrantable failure to comply with a mandatory standard.

104(a) Citation No. 8403825, was issued for violation of 30 CFR § 75.223(a)(1).

The Operator is required on an ongoing basis to propose revisions to the Roof Control Plan when conditions indicate the plan is not adequate. Revisions to the Roof Control Plan were not proposed by the Operator when conditions indicated the Roof Control Plan did not control ribs as required. Numerous dangerous and loose ribs were observed throughout the 001 Section. The rib at survey station No. 2660 fell, dislodging a Heintzmann jack that struck a miner in the head, causing fatal injuries. It is obvious to the casual observer that loose and dangerous ribs were present through out the 001 MMU/Section and had existed for several shifts. A revision to the Roof Control Plan shall be submitted to the District Manager, addressing necessary additions to the Roof Control Plan to control these ribs.

## Appendix A

### Persons Participating in the Investigation

#### Lone Mountain Processing Inc.

Arnold Hammons ..... General Manager  
David Webb ..... General Mine Foreman  
Donnie Feltner ..... Day Shift Mine Foreman  
John Pridemore ..... 2<sup>nd</sup> Shift Mine Foreman  
Buddy Howard ..... Manager of Safety  
Ronnie Smith ..... Safety Supervisor  
Jim Vicini ..... Manager of Safety (Arch Coal)  
Marco Rajkovich..... Attorney for Lone Mountain

#### Kentucky Office of Mine Safety and Licensing

Greg Goins ..... Accident Investigator  
Tim Fugate ..... Accident Investigator  
John Patterson..... Inspector  
Todd Middleton ..... Inspector

#### Mine Safety and Health Administration

Clayton E. Sparks ..... Acting Assistant District Manager  
Samuel R. Creasy ..... CMS&H Inspector/Supervisor  
John Boylen ..... Roof Control Specialist/ Accident Investigator  
James A. Lundy ..... Health Specialist/ Accident Investigator  
William J. Gray ..... Pittsburgh Technical Support  
Alice Blanton..... Educational Field Services  
Brian Winfrey ..... Solicitor's Office

Appendix B

List of Persons Interviewed

June 17, 2010

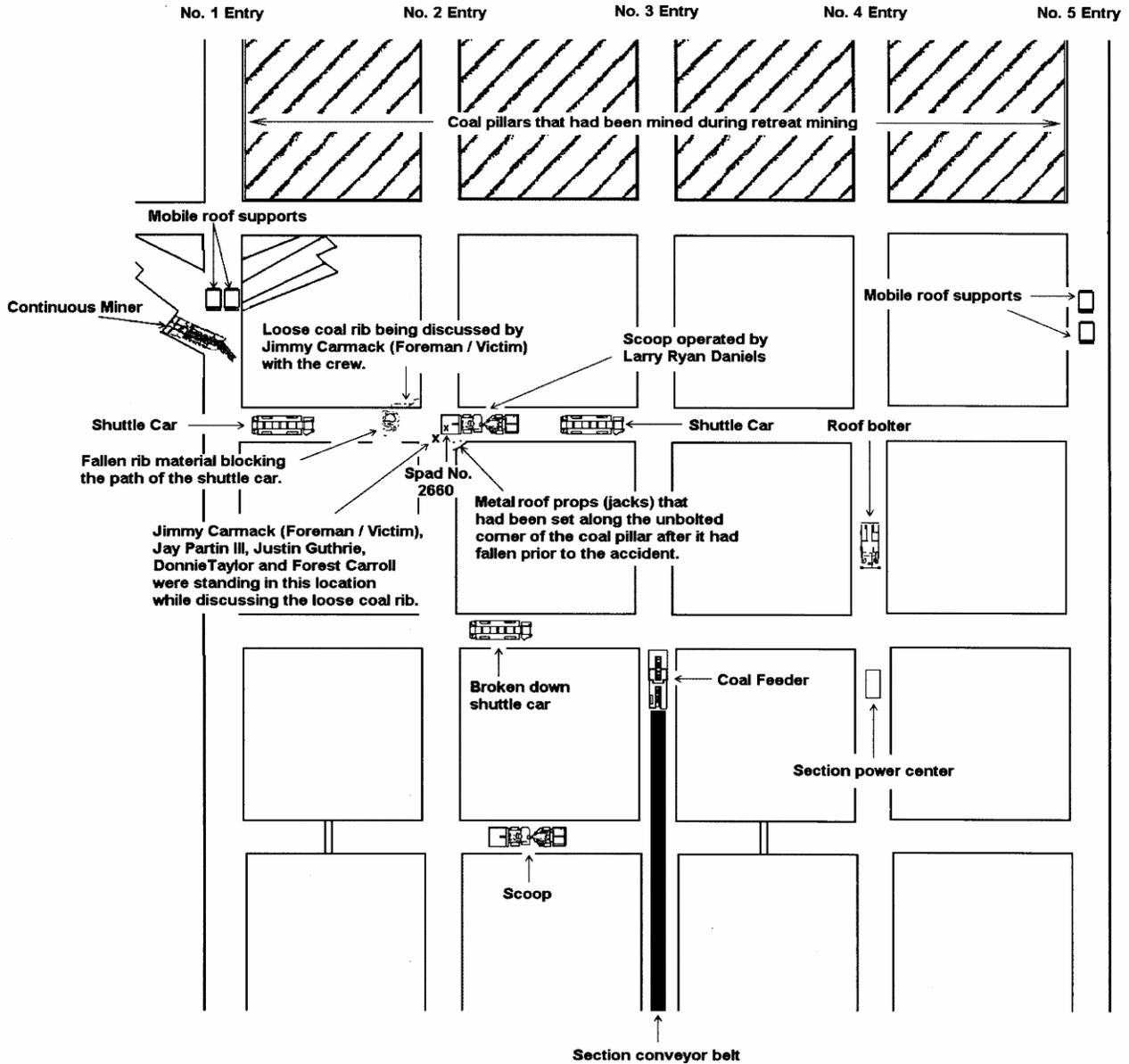
Paul Stanton ..... Electrician  
Jay Partin, III ..... Mobile Roof Support  
Donnie Taylor ..... Shuttle Car Operator  
Justin L. Guthrie ..... Continuous Miner Operator  
Forest Evan Carroll ..... Shuttle Car Operator  
Larry Ryan Daniels ..... Scoop Operator  
Jonathan E. Pridemore..... 2<sup>nd</sup> Shift Mine Foreman  
Billy Wilson..... Day Shift Section Foreman  
Donald Ray Feltner ..... 1<sup>st</sup> Shift Mine Foreman  
David Scott Orr ..... 3<sup>rd</sup> Shift Section Foreman  
Mark Messer ..... Shuttle Car Operator  
Adam George Carr..... Foreman

# Appendix C

LONE MOUNTAIN PROCESSING, INC.  
MINE NO. - CLOVER FORK NO. 1

Mine ID 15-18647

## 001 Section The Accident Scene - No. 2 Entry

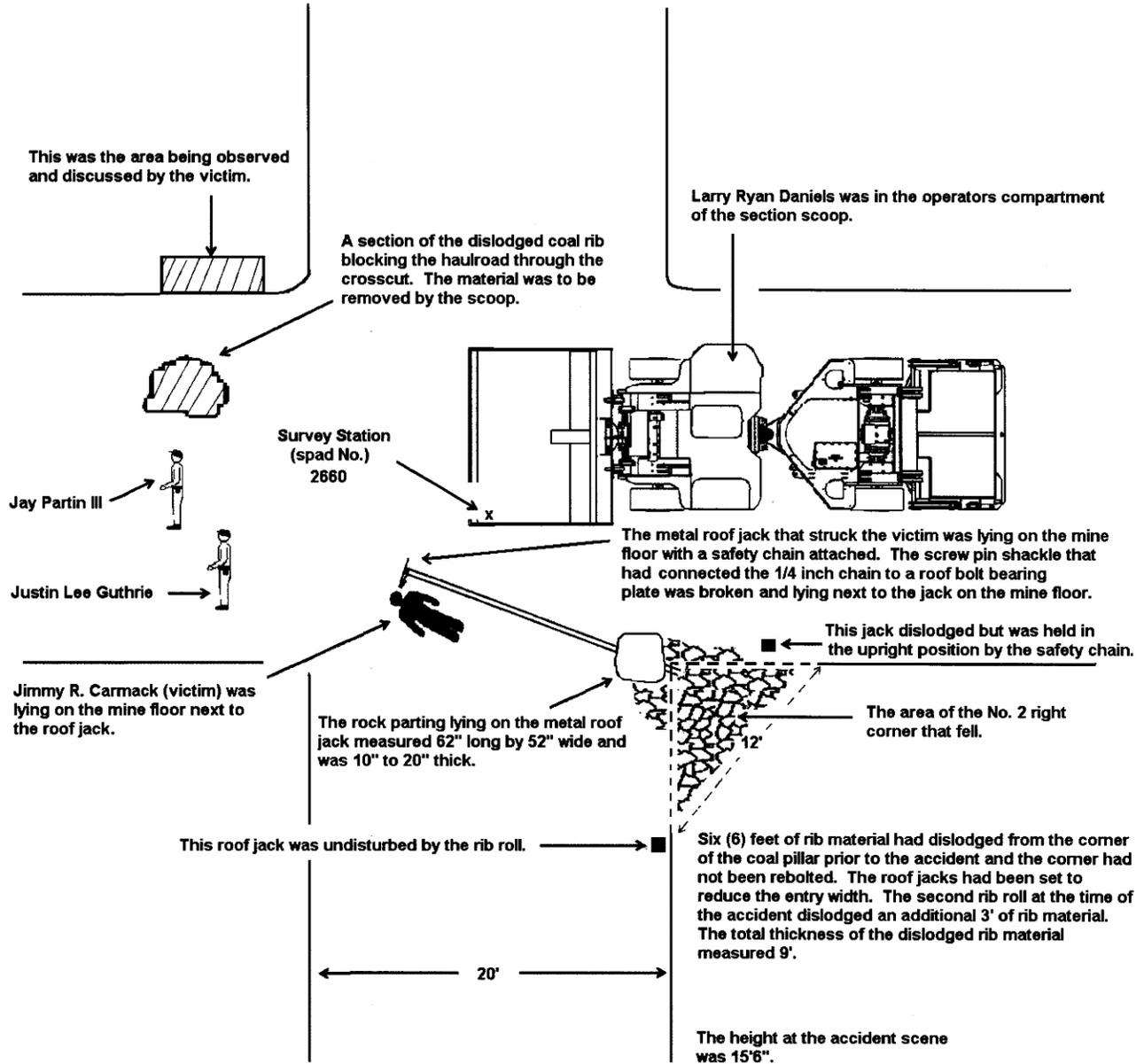


Sketch No. 1  
Before The Accident  
Not To Scale

**LONE MOUNTAIN PROCESSING, INC.  
MINE NO. - CLOVER FORK NO. 1**

**Mine ID 15-18647**

**001 Section  
The Accident Scene - No. 2 Entry**



**Sketch No. 2  
After The Accident  
Not To Scale**

**Appendix D**  
**Photograph of Accident Scene**



## Appendix E

### 7000-50b Victim Information

Accident Investigation Data - Victim Information

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



Event Number:

**Victim Information: 1**

1. Name of Injured/III Employee: <i>Jimmy R. Carmack</i>		2. Sex: <i>M</i>	3. Victim's Age: <i>42</i>	4. Last Four Digits of SSN: <i>5980</i>	5. Degree of Injury: <i>01 Fatal</i>	
6. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 06/16/2010 b. Time: 18:20</i>				7. Date and Time Started: <i>a. Date: 06/16/2010 b. Time: 15:00</i>		
8. Regular Job Title: <i>049 Supervisory/management/foreman/boss</i>			9. Work Activity when Injured: <i>087 Supervise (not simply observe operation)</i>		10. Was this work activity part of regular job? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
11. Experience a. This Work Activity:	Years <i>10</i>	Weeks <i>0</i>	Days <i>0</i>	b. Regular Job Title: <i>10 0 0</i>	c. This Mine: <i>0 28 0</i>	d. Total Mining: <i>18 0 0</i>
12. What Directly Inflicted Injury or Illness? <i>068 Jack-mechanical/hydraulic/air-not longwall</i>				13. Nature of Injury or Illness: <i>140 Concussion -- brain, cerebral</i>		
14. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>						
15. Company of Employment:(If different from production operator) <i>Operator</i>			Independent Contractor ID: (if applicable)			
16. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input type="checkbox"/> CPR: <input type="checkbox"/> EMT: <input type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input checked="" type="checkbox"/>						
17. Part 50 Document Control Number: (form 7000-1) <i>220101810057</i>			18. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>			

**Victim Information:**

1. Name of Injured/III Employee:		2. Sex:	3. Victim's Age:	4. Last Four Digits of SSN:	5. Degree of Injury:	
6. Date(MM/DD/YY) and Time(24 Hr.) Of Death:				7. Date and Time Started:		
8. Regular Job Title:			9. Work Activity when Injured:		10. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input type="checkbox"/>	
11. Experience a. This Work Activity:	Years	Weeks	Days	b. Regular Job Title:	c. This Mine:	d. Total Mining:
12. What Directly Inflicted Injury or Illness?				13. Nature of Injury or Illness:		
14. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>						
15. Company of Employment: (If different from production operator)			Independent Contractor ID: (if applicable)			
16. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input type="checkbox"/> CPR: <input type="checkbox"/> EMT: <input type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>						
17. Part 50 Document Control Number: (form 7000-1)			18. Union Affiliation of Victim:			

**Victim Information:**

1. Name of Injured/III Employee:		2. Sex:	3. Victim's Age:	4. Last Four Digits of SSN:	5. Degree of Injury:	
6. Date(MM/DD/YY) and Time(24 Hr.) Of Death:				7. Date and Time Started:		
8. Regular Job Title:			9. Work Activity when Injured:		10. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input type="checkbox"/>	
11. Experience a. This Work Activity:	Years	Weeks	Days	b. Regular Job Title:	c. This Mine:	d. Total Mining:
12. What Directly Inflicted Injury or Illness?				13. Nature of Injury or Illness:		
14. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>						
15. Company of Employment:(If different from production operator)			Independent Contractor ID: (if applicable)			
16. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input type="checkbox"/> CPR: <input type="checkbox"/> EMT: <input type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>						
17. Part 50 Document Control Number: (form 7000-1)			18. Union Affiliation of Victim:			