

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Surface Coal Mine

Fatal Machinery Accident
May 14, 2011

Guyan
Apogee Coal Company LLC
Rum Creek Road
Yolyn , Logan County, West Virginia
I.D. No. 46-08939

Accident Investigator

Dennis J. Holbrook
Accident Investigator/Coal Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
District 12
100 Bluestone Road
Mt. Hope, West Virginia 25880
Timothy R. Watkins, District Manager

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OVERVIEW

On Saturday, May 14, 2011, at approximately 8:18 p.m., Richard L. Young, a 37 year old mechanic with 14 years of mining experience, was killed while removing the fuel tank/counter weight from a Caterpillar 992 G end loader. Two mechanics were preparing the machine to remove the fuel tank which was suspected to contain contaminants. One mechanic was working in the engine radiator compartment area. The victim placed himself under the machine and started removing the sixteen 24 mm x 80 mm bolts holding the counter weight onto the machine. When the victim started removing the fifteenth bolt, the 11,685 pound counter weight fell, crushing the victim.

The accident occurred because proper work procedures were not being followed. The bolts were removed without installing proper blocking to assure the counter weight was secured against motion. The procedures used did not follow the recommended procedures which were available on site from the machine manufacturer.

GENERAL INFORMATION

The Guyan mine is surface mine located near Yolyn, Logan County, West Virginia. The mine is operated by Apogee Coal Company, LLC, and its parent company is Patriot Coal Company. Coal is being mined from the Lower Five Block, Stockton and Coalburg seams. The operation works two 10-hour

production shifts and two 12-hour maintenance shifts, seven days per week. The Guyan mine employs 214 people and operates two active loader pits and two active excavator pits.

The mine produces approximately 6,300 tons of raw coal per day. Coal is transported by truck to the Fanco preparation plant where it is processed and transported by belt conveyors to the Fanco load out facility and loaded on rail cars.

The principal officers for Apogee Coal Company LLC are:

Charles A. Ebetino	President
Lawrence Bell.....	Vice President
Mark N. Schroeder	Vice President/Treasurer
Elizabeth S. Power	Secretary

The last regular MSHA inspection of the Guyan mine was completed on April 30, 2011. The Non-Fatal Days Lost (NFDL) incidence rate for this mine in 2010 was 1.09, compared to the national average of 1.12 for mines of the same type.

DESCRIPTION OF ACCIDENT

On May 14, 2011, at 7:00 p.m., the second shift maintenance crew received instructions from Jimmy Browning, Maintenance Foreman, as to their job duties for that shift. The victim and Jason Gore, Mechanic, were given a choice to perform preventative maintenance or remove the fuel tank on the Caterpillar 992 G end loader. A contract welder employed by Fab-Tech Corporation was also assigned to replace a center shank on the bucket of the same end loader.

The end loader was parked at the entrance to the maintenance yard at the end of the first shift. The victim moved the end loader approximately 1,000 feet to the area where the work was to be performed.

He obtained a steel rim with 1 inch metal welded to the top and bottom which was used as blocking material at the mine. He placed the blocking material beneath the end loader's front bucket for support and raised the bucket to allow the welder to replace the center shank.

Gore began removing panels and guards from the upper side of the end loader when he noticed the victim was removing the mounting bolts that held the fuel tank and counter weight to the machine. Gore climbed off the end loader and cautioned the victim that some of these bolts could be sheared due to the counter weight rubbing against large rocks.

At approximately 8:15 p.m., Brannon Adams, Welder, arrived on site and Gore asked him to make lifting brackets for the fuel tank so they could hook cranes to each side to lift it so that it would be level. Gore returned to the end loader and began removing the air dams around the radiator. Adams moved his truck into position approximately 30 feet from the rear of the end loader and then retrieved a tape measure to take measurements for the lifting brackets he was making.

William Wolford, greaser and lube truck operator, was on site and asked the victim if there was any preventative maintenance that he could do. The victim told him that he could change the oil filters.

Wolford and Adams were at the back rear of the end loader. Wolford had completed changing the oil filters and walked up to tell the victim that he would be back to change the fuel filters. Adams measured the brackets and exchanged greetings with the victim who was under the fuel tank/counter weight. Adams received a phone call and turned to walk back to his truck. Wolford saw the victim move to the farthest side from him underneath the counter weight. Wolford states the victim placed his impact wrench on a bolt and as soon as he pulled the trigger on the impact wrench, the counter weight cracked and fell onto the victim. Adams states that he heard the air gun sound for a split second then heard a loud pop and turned and witnessed the fuel tank/counter weight fall, crushing the victim. According to the record of the cell phone Adams was using, the time was 8:18 p.m. The foreman and security were notified to contact 911 and rescue efforts were started immediately. A contract maintenance truck that was equipped with a crane was in the area. It was being used to carry crib blocks which were approximately 80 feet away at the storage area to the accident site. The four ton cranes on two mechanics trucks were connected to the counter weight on the left side. The counter weight was lifted and blocked, and the victim was removed. The company employee emergency medical technicians administered oxygen and first aid until The Logan Emergency Ambulance Service Authority (LEASA) arrived and transported the victim to the Logan Regional Medical Center. The First Chief Medical Examiner wrote in his report that the victim was pronounced dead at 8:50 p.m., May 14, 2011.

INVESTIGATION OF ACCIDENT

The Mine Safety and Health Administration was notified of the accident at 8:35 p.m., on May 14, 2011. A 103(j) Order was issued to ensure the safety of all persons during the recovery operations. The Order was modified to a 103(k) upon arrival of the accident investigator.

The investigation was conducted jointly with the West Virginia Office of Miners' Health, Safety and Training (WVOMSHT), with assistance from representatives

from the United Mine Workers of America (UMWA), and the mine operator. A list of the persons who participated in the investigation is contained in Appendix A.

Interviews were conducted with the employees and management personnel of Apogee Coal Company deemed to have knowledge of the facts regarding the accident. The interviews were conducted at the MSHA Logan Field Office in Logan, West Virginia, on May 17, 2011. A list of persons who were interviewed is contained in Appendix B.

DISCUSSION

The end loader being repaired was a Caterpillar 992 G, serial number 7HR75004. The end loader was used to load coal into trucks for transportation from the mine pit to the preparation plant. It had been reported to management that the end loader was demonstrating a loss of power. Mechanics had examined the loader and suspected the loss of power was due to contaminants that had bypassed the fuel filter and settled in the fuel tank. Management ordered the loader to be taken to the maintenance yard for repairs and preventative maintenance at the end of the day shift on May 14, 2011. The repairs and preventive maintenance were scheduled to begin on the second shift.

In order to gain access to the fuel tank, the counter weight had to be removed from the machine. During interviews and discussion, it was determined that the two mechanics assigned to the task had previous experience and had removed counter weights in the past from similar machines. Testimony indicates the manufacturer's service manual and computers provided to the mechanics described in detail the steps and safety precautions to be taken for this particular task, but were not referenced before or during the removal of the counter weight. The service manual for this machine indicates the rear bumper assembly should be supported with a suitable lift truck. Tooling (blocking material) would then be placed under the rear bumper assembly as a safety precaution while removing the mounting bolts.

The service manual specifies that 16 bolts (eight on each side) connect the counter weight to the machine. Fourteen bolts were discovered in two separate piles beneath the counter weight after the accident occurred. Seven bolts were found in a pile beneath the left side of the counter weight. Seven bolts were discovered in a similar manner beneath the right side of the counter weight. The final and eighth bolt from the left side was found broken with the head of the bolt and approximately two inches of thread in the impact socket used to remove the bolt. The frame of the machine contained the rest of the broken bolt. The remaining bolt that was holding the counter weight was found broken with the

head of the bolt underneath the area where the bolt had failed. The rest of the broken bolt was found to be in the frame of the machine.

A welder was assigned to attach brackets to each side of the counter weight to attach lifting hooks and cranes to assist in the removal process of the counter weight. Testimony denotes there was communication with the welder and mechanics and both mechanics knew the need to support the counter weight.

A lube/fuel truck was used to empty the fuel from the tank in order to reduce the weight. The service manual for this machine indicates the weight of the empty fuel tank and counter weight is approximately 11,685 pounds.

Blocking materials normally used by mechanics, such as crib blocks, jack stands, and wheel truck rims with flat metal attached to top and bottom for support, were found in numerous quantities within 150 feet of the accident site. However, they were not used to secure the counterweight against motion.

Testimony points out that this task is not a routine repair and is not performed on a regular basis.

Training

The Company's training records were examined by a representative of MSHA's Educational Field Services. A noncontributory violation was issued for not maintaining a copy of Young's task training records.

Examination

The area where the accident occurred was in the maintenance yard. The area was examined with no hazards reported the day of the accident.

Toxicology

The Chief Toxicologist for the West Virginia Office of the Chief Medical Examiner stated that no alcohol or drugs were detected.

ROOT CAUSE ANALYSIS

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

identified and their corresponding corrective actions were implemented to prevent a recurrence.

1. *Root Cause:* Management failed to ensure that the counter weight/fuel tank was blocked or secured against motion before the mounting bolts were removed.

Corrective Action: Management has implemented a written procedure that requires verification that adequate blocking or securing material is in place prior to anyone working under machinery or removing large components.

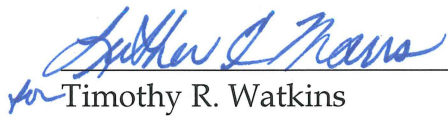
2. *Root Cause:* Management failed to instruct the mechanics to reference the manufacturer's service manual or computer service guide when performing a task that is not done on a regular basis. Both forms of repair reference material instruct that blocking the counter weight was the first major step of this repair.

Corrective Action: Management now requires mechanics performing tasks which are not performed on a regular or routine basis to refer to the manufacturer's service manuals or computer service guide for safe repair procedures before beginning the task.

CONCLUSION

The accident occurred because mounting bolts were removed from an 11,685 pound counter weight without installing proper blocking to assure that the counter weight was secured against motion. The employee was positioned directly below the counter weight while performing this task.

Approved By:


for Timothy R. Watkins
District Manager

10-4-11
Date

ENFORCEMENT ACTIONS

1. Order No. 8116888 was issued to Apogee Coal Company LLC on May 14, 2011, under the provisions of Section 103(j) of the Mine Act.

This mine has experienced a possible fatal injury to a miner trapped under a counter weight of a Caterpillar 992 G end loader. This Order is issued verbally to management by phone conversation to prohibit all persons from entering the area of the end loader except persons needed to rescue or recover the individual. The accident investigator arrived on-site at 12:55 a.m., and modified the Order to a 103(k).

2. A 104(a) Citation, No. 8116889, issued to Apogee Coal Company LLC, for a violation of 30 CFR, Part 77.404(c).

On May 14, 2011 at approximately 8:18 p.m., a mechanic was working under a Caterpillar 992 G end loader removing the mounting bolts which holds the approximate 11,685 fuel tank/counter weight to the machine. When the mounting bolts were removed, the counter weight fell, crushing the miner. The fuel tank/counter weight was not blocked against motion.

APPENDIX A

List of person furnishing information and/or present during the investigation

Apogee Coal Company LLC, Officials and Employees

Kent DeRocher.....General Manager
Matt Cook..... Mine Manager
Dennis Dillow Production Superintendent
Benny Dixon Maintenance Manager
Jimmy Browning Second Shift Maintenance Foreman
Mike Adkins First Shift Maintenance Foreman
Harvey Ferrell.....Director of Safety
Dennis Wellman..... Safety Director
Lee Cogar UMWA International Representative
Roger HortonUMWA Chairman of Safety Committee
Joe HicksUMWA Miners Representative
Mike Cimino Attorney, Jackson-Kelly

West Virginia Office of Miners Health Safety and Training

John KinderSupervisor/ Accident Investigator
Mike Pack District Inspector
Lonnie Gore District Inspector
Barry KoerberAttorney

Mine Safety and Health Administration

Dennis Holbrook CMS&H Inspector/ Accident Investigator
Mike Dickerson Family Liaison
Scott Hecker Attorney, Department of Labor
Mike Browning Educational Field Services

APPENDIX B

List of Persons Interviewed

Jason Gore Second Shift Mechanic
William Wolford Lube Truck Driver
Brannon Adams..... Welder/Fab-Tec Contractor
Evan Vance..... Emergency Medical Technician
William Baisden Parts Runner Garretson Machine
Jimmy Browning Second Shift Maintenance Foreman
Dennis Dillow Second Shift Superintendent

Sketch of the Accident



APPENDIX D

Victim Information

Accident Investigation Data - Victim Information

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



Event Number: 6 2 9 2 9 5 4

Victim Information: 1

1. Name of Injured/Ill Employee: Richard L. Young		2. Sex M	3. Victim's Age 37	4. Degree of Injury: 01 Fatal	
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: a. Date: 05/14/2011 b. Time: 20:50			6. Date and Time Started: a. Date: 05/14/2011 b. Time: 19:00		
7. Regular Job Title: 104 Mechanic		8. Work Activity when Injured: 039 Machine maintenance/repair		9. Was this work activity part of regular job? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
10. Experience: a. This Work Activity: 1 0 0		b. Regular Job Title: 1 0 0		c. This Mine: 5 29 4	
11. What Directly Inflicted Injury or Illness? 078 Counter weight Caterpillar end loader		12. Nature of Injury or Illness: 170 Crushing			
13. Training Deficiencies: Hazard: New/Newly-Employed Experienced Miner: Annual: Task:					
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: CPR: EMT: <input checked="" type="checkbox"/> Medical Professional: <input checked="" type="checkbox"/> None:					
16. Part 50 Document Control Number: (form 7000-1)			17. Union Affiliation of Victim: 2555 United Mine Workers of Amer.		

Victim Information:

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

Victim Information:

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