

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Surface Coal Preparation Facility

Fatal Powered Haulage Accident
August 19, 2005

K-J Trucking Co. (F20)
Harrogate, Tennessee

James Long Trucking (H435)
Speedwell, Tennessee

at

Preparation Plant
Bell County Coal Corporation
Middlesboro, Bell County, Kentucky
ID No. 15-10212

Accident Investigators

Kevin Doan
Coal Mine Safety and Health Inspector

Ron Medina
Mechanical Engineer, Mechanical Safety Division
MSHA Approval and Certification Center

Cecil Partin
Coal Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
District 7
3837 South U.S. HWY 25E
Barbourville, Kentucky 40906
Norman Page, District Manager

TABLE OF CONTENTS

PHOTOGRAPH OF ACCIDENT SITE.....	ii
OVERVIEW	1
GENERAL INFORMATION.....	1
DESCRIPTION OF ACCIDENT	2
INVESTIGATION OF ACCIDENT	3
DISCUSSION.....	3
ROOT CAUSE.....	5
CONCLUSION.....	6
ENFORCEMENT ACTIONS.....	7
APPENDIX A - Persons Participating in the investigation.....	8
APPENDIX C - Sketches.....	9 & 10

ACCIDENT SITE



OVERVIEW

At approximately 12:20 p.m. on Friday, August 19, 2005, a 51-year old truck driver with 33 years of experience and a 56-year old truck driver with 30 years of experience were fatally injured at Bell County Coal Corporation's Preparation Plant. The accident occurred when a concrete block pump house, occupied by four contract truck drivers having lunch, was struck and destroyed by a 1988 Mack haul truck which had rolled from its parked position upslope from the pump house.

The accident occurred as a result of a truck driver's use of the hand brake for parking and failure to set the parking brake and turn the wheels toward the berm when leaving the truck parked. There was no established procedure to assure that trucks were secured against motion when parked.

GENERAL INFORMATION

The preparation plant for Bell County Coal Corporation receives and processes bituminous coal from two company owned underground mines, two underground mines operated by independent contractors and from several other sources as market conditions and customer orders warrant. The clean coal produced is sold to various customers as either a steam or industrial stoker product and is shipped by both truck and rail (CSX transportation).

An average of 5,000 tons of raw coal is processed each day, five days per week, for 10 to 12 hours per day. The day shift begins at 7:00 a.m. and processes coal until the second shift begins at 3:00 p.m. The second shift processes coal for two to four hours, depending upon coal supplies and scheduled maintenance. The second shift then performs maintenance on the plant. There is no third shift.

Three independent contract trucking companies use six trucks in the transportation of the refuse material from the plant to the refuse impoundment. These are: K-J Trucking Co.(F20), James Long Trucking (H435) and A-J-J Trucking Co. Inc. (F18). These trucks are operated from 7:00 a.m. until the refuse bin is emptied after the plant ceases production on the second shift, a total of 10 to 12 hours per day.

The principal officers for the preparation plant at the time of the accident were:

John L. Brooks Superintendent
Wilburn N. Howard Safety Director

Prior to the accident, the Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection on July 26, 2005. The Non-Fatal Days Lost

NFDL) injury incidence rate for the mine in 2004 was 5.04 compared to a National NFDL rate of 2.57 for surface facilities.

DESCRIPTION OF ACCIDENT

On August 19, 2005, operations at the Bell County Coal Corporation preparation plant proceeded normally from the 7:00 a.m. starting time until approximately noon. The preparation plant was processing coal from a single surface mine at the time in order to test this coal's quality, and was operating at a reduced rate. The contract refuse truckers had emptied the refuse bin and were waiting for it to refill to resume hauling. Since it was near lunch time, and it would be several minutes before the bin would be refilled, Donald Slusher, a driver for James Long Trucking, suggested that they go to the pump house for lunch. This eight by eight feet concrete block building contained the time clock for the trucks, a microwave oven and some benches. This was the typical meeting location for the truckers and was less than 50 feet from the bin.

Beve Gregory, a driver for K-J Trucking Co., parked his truck along side the bin and Donald Engle, Jr., also a driver for K-J Trucking Co., parked in a level area to the west of the pump house. A few minutes later, Arlie Napier, a driver for James Long Trucking, parked on the hill above the pump house and walked down and joined the others. (See Sketches of Accident Site) Napier stated he set both the park brake and the hand brake before exiting the truck, leaving it running and with the transmission in neutral. After a period of time, estimated between five and 15 minutes, Napier's truck rolled down the hill and struck the center of the pump house.. The roof was knocked up and off the back of the building and the concrete block walls were destroyed. An electric motor and pump, mounted to the concrete floor, inside the building, contacted the front axle and stopped the truck.

Ricky Lawson, a contract trucker for K-J Trucking Co., had pulled in behind Napier's truck, heard a sound like a service brake being released, and saw the truck roll down the hill and strike the pump house. Lawson called for help on the CB radio saying that a truck had hit the building and people were inside. Lawson then exited his truck and went down the hill to render assistance to the victims. He helped Engle extricate himself from beneath the building debris and assisted him to a seat on some of the debris.

Brian Johnson, a contract trucker for James Long Trucking, also observed the truck strike the building. He then exited his truck and went down to the pump house. Napier had made his way back to the top of the hill. Johnson said Napier climbed up into the cab and asked him if he should turn the truck's engine off and Johnson said he thought so. Napier shut the engine off and exited the truck.

Terry Weaver, Plant Foreman and MET called Tim Hensley, Plant Operator and MET, on the CB radio and told him to call 911 and bring the first aid supplies to the pump house. Weaver ran to the building, finding Slusher on the driver's side of the truck on the ground and Gregory under the center of the front of the truck. Weaver said that both men were deceased. He then saw Engle sitting on a transformer complaining of a broken leg. Hensley called 911 and ran to the scene. He checked Slusher and Gregory for a pulse and found none. Napier suffered minor cuts and bruises, but was ambulant and participated in the recovery operations before going to the Middlesboro Appalachian Regional Hospital.

The Middlesboro Fire Department received the 911 call at 12:28 p.m. Two ambulances arrived on the scene at 12:34 p.m. Engle was treated on site for a broken right tibia and fibula and transported to the Middlesboro Appalachian Regional Hospital, leaving the scene at 12:44 p.m. Gregory and Slusher were pronounced dead by Clyde Creech, Bell County Coroner and transported to Creech Funeral Home in Middlesboro, leaving the scene at 1:20 p.m.

INVESTIGATION OF THE ACCIDENT

The MSHA Barbourville Field Office was notified of the accident at 12:40 p.m. by telephone call from Wilburn Howard, Safety Director for Bell County Coal Corporation. Upon arrival at the site, a 103(k) order was issued at 1:45 p.m. to assure the safety of persons at the site and to preserve the scene until an accident investigation could be completed and the site deemed safe.

The Kentucky Office of Mine Safety and Licensing (OMSL) participated in this investigation. A complete list of persons participating in the investigation can be found in Appendix A. Interviews were conducted on August 23, 2005 at the MSHA District Office in Barbourville, Kentucky. Nine persons, thought to have information relevant to the accident investigation were interviewed.

DISCUSSION

The Truck

The 1988 Mack RD-866SX haul truck, Vehicle Identification Number 1M2P156C6JA001090 was equipped with a Model NTC -350, Cummins, turbocharged diesel engine, and an eight speed Eaton-Fuller transmission. The truck had two drive axles and was provided with a Jacobs Engine Brake (Jake Brake). The Jake Brake is a compression release engine braking system that could not have been applied at the time of the accident with the truck transmission in neutral. The empty weight of the truck is approximately 39,500 lbs. The truck suffered only cosmetic damage in the accident and was fully operational for the testing detailed below.

Brake Systems

Service Brake System Description: The service brake system consists of an air-operated, drum type arrangement at each wheel. Each drive axle brake chamber is composed of two separate chambers coupled together into one unit to serve two separate functions. The forward chamber provides service braking capability and the rear chamber provides parking brake capability. When compressed air enters the service brake chambers, the pushrods extend from the chambers and apply the service brake.

Parking Brake System Description: The rear portion of each drive axle brake chamber is provided with parking brake capability. Without compressed air in the parking brake portion, a self-contained spring expands. This extends the pushrod and applies the parking brake. The parking brake can be applied manually with the push-pull parking brake valve in the operator's cab or automatically from loss of air system pressure.

Hand-Control Brake System Description: The truck is equipped with a Bendix TC-2 hand-control valve on the steering column. This control is sometimes referred to as a "dump brake" or "hand-control brake lever." The control lever is stamped with the label: "Not For Parking." The lever does not spring return to the off position upon release. Moving the lever in a clockwise direction applies the service brakes on the rear axles without applying the steering axle service brakes. Greater clockwise movement of the lever increases the delivery pressure to the rear brakes. This hand-control valve is designed to limit the maximum delivery pressure to 50 p.s.i., when fully applied.

Recreation of the Accident Conditions

On Saturday morning, August 20, 2005, a recreation of the events leading up to the accident was conducted. MSHA personnel and the truck owner participated in this recreation. A thorough examination of the truck was first conducted to assure the safety of those involved in the testing procedures. The truck was driven to the location where it was parked immediately before the accident and positioned in accordance with the witness' accounts. A series of performance tests were conducted while an operator and an observer were in the cab. The engine was running at low idle and an air reservoir pressure of approximately 115 p.s.i. was maintained during all the tests. The truck was empty and facing downgrade with the wheels straight in order, to the extent possible, to duplicate the conditions prior to the accident.

Service brake: The service brake was applied and held the truck on the grade.

Parking brake: The parking brake was applied and all other brakes were released. In this test, the truck remained stationary on the grade until the test was ended after 22 minutes.

Hand-control brake: The hand-control brake lever was moved to the fully applied position and the driver removed his hand from the control. All other brakes were released. The hand-control brake lever slowly moved from the fully applied position toward the released position. Throughout this time the truck remained stationary. After 8

minutes the hand-control brake lever rapidly moved the last several inches to the released position and the truck started rolling down the grade. The slow movement, followed by fast movement of the control lever was characteristic of all the tests of the hand-control brake system.

Hand control brake and parking brake (parking brake manually released): Both the parking brake and the hand-control brake systems were applied, and the driver removed his hand from the hand-control brake lever. The hand-control brake lever slowly moved from the fully applied position toward the released position and after 7 ½ minutes reached the fully released position. The truck remained stationary throughout this time. After waiting four more minutes, the parking brake was manually released by the driver and the truck started coasting down the grade. When the parking brake was immediately reapplied, the truck came to a quick stop.

Hand control brake and parking brake: Both the parking brake and the hand-control brake systems were again applied and the driver removed his hand from the hand-control brake lever. The hand-control brake lever slowly moved toward the released position and after 12 ½ minutes it reached the fully released position. The parking brake remained applied and held the truck stationary on the 12.9 percent grade until the test was ended after 25 minutes.

The technical evaluation during the recreation of the accident conditions revealed that only the setting of the hand brake could produce the events described by the various witnesses. A time lapse of 7 ½ to 12 ½ minutes from the application of the hand brake to its release was shown during the evaluation. This is consistent with the witness' accounts, allowing Napier ample time to walk to the pump house and join the other drivers.

Human Factors: Urine and blood samples were obtained from Arlie Napier shortly after the accident. A toxicology analysis was conducted with the results as follows: Alcohol content of blood – 0.00gram/100 ml. Drug content of blood – No drugs identified; Drug content of urine – presence of Cannabinoid Metabolite(s) indicated.

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, causal factors were identified that, if eliminated, would have either prevented the accident or mitigated its consequences.

Listed below are causal factors identified during the analysis and their corresponding corrective actions implemented to prevent a recurrence of the accident:

1. *Causal Factor:* The parking brake was not set and the wheels of the vehicle were not turned toward the berm or high wall or blocked when the truck was parked and left unattended.

Corrective Action: The Company has required that all current truck drivers be trained specifically in the proper method of parking a truck and that this be made a part of the training for all newly employed truck drivers. The operator should establish a firm procedure to assure that any truck operated on mine property will be secured against motion when parked.

CONCLUSION

The accident occurred as a result of a truck driver's use of the hand brake for parking and failure to set the parking brake and turn the wheels toward the berm when leaving the truck parked. There was no established procedure to assure that trucks were secured against motion when parked.

Approved By:

Norman G. Page
District Manager

Date

ENFORCEMENT ACTIONS

- 1) A 103(k) Order, No. 7554169 was issued to the operator to ensure the safety of all persons at the facility until an investigation was completed and all areas and equipment were deemed safe.
- 2) A 104(a), S&S citation, moderate negligence, No. 7550883 was issued to James Long Trucking for violation of 77.1607(n).

Testing by MSHA's Mechanical and Engineering Safety Division, Approval and Certification Center subsequent to the double fatality accident of August 19, 2005 has shown that the number 6 Mack refuse truck was parked on a grade without the parking brake being set or the wheels turned toward the berm or blocked as required.

Two miners suffered fatal injuries and a third suffered a lost time injury (broken leg) when this truck rolled down a grade and struck a block pump house where the victims were located.

**Appendix A
Persons Participating in the Investigation**

Bell County Coal Corporation

<u>Name</u>	<u>Title</u>
Wilburn "Buddy" Howard.....	Safety Director
Marco Rajkovich.....	Council

Kentucky Office of Mine Safety and Licensing

<u>Name</u>	<u>Title</u>
Tracy Stumbo.....	Chief Accident Investigator
Jim Owens	Surface Specialist

Mine Safety and Health Administration

<u>Name</u>	<u>Title</u>
MaryBeth Bernui	Attorney, Office of the Solicitor
Kevin Doan.....	CMS&H Inspector/Accident Investigator
James Hackworth.....	CMS&H Supervisory/Training
Daniel Johnson.....	CMS&H Inspector Supervisor
Ron Medina.....	Mechanical Engineer
Cecil Partin.....	CMS&H Inspector/Accident Investigator