CAI-2008-14

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRIATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Powered Haulage Accident

June 5, 2008

Robinson Run No. 95
Consolidation Coal Company
Mannington, Marion County West Virginia
MSHA ID No. 46-01318

Accident Investigators

Joshua R. Brady
Mechanical Engineer

William L. Sperry
Coal Mine Safety and Health Inspector (Electrical)

Ronald Medina
Mechanical Engineer
Mechanical Safety and Engineering Division

Originating Office - Mine Safety and Health Administration
604 Cheat Road Morgantown, West Virginia 26508
Bob E. Cornett, District Manager

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PHOTO OF ACCIDENT SCENE

OVERVIEW

On Thursday, June 5, 2008, locomotive operator (motorman) Gary Hoffman was fatally injured when he lost control of a 20 ton locomotive and two flat cars loaded with donut cribs. The victim fell, jumped, or was knocked off the company Number 67 locomotive. The victim was unable to maintain control of the locomotive and loaded flat cars due to condensation and moisture on the rails.

GENERAL INFORMATION

The Robinson Run No. 95 Mine is an underground coal mine, owned and operated by the Consolidation Coal Company. The mine is accessed by four portals and one slope; Camp Run Portal, Margaret Portal, Oakdale Portal, located in Marion County, and the Robinson Run Portal and slope, located in Harrison County, West Virginia. Coal is mined from the 76 inch thick Pittsburgh Number 8 coal seam by three advancing continuous mining machine sections and one retreat longwall section. The Robinson Run No. 95 Mine employs 341 underground hourly workers, 95 salary workers, 46 surface hourly workers and 8 other hourly employees. The average production is approximately 18,000 tons per day. The mine typically operates eight hour shifts, three shifts a day. Maintenance of equipment is conducted on any of these shifts as needed. Coal is removed from the mine by a belt conveyor system. Track haulage is used to transport men and materials underground. The principal officers at the time of the accident were:

Eric Schubel……...General Manager, Consolidation Coal Company
Todd McNair…….Mine Superintendent, Consolidation Coal Company
Mike Nestor……...Safety Supervisor, Consolidation Coal Company

An MSHA Safety and Health Inspection (E0l) was completed on March 31, 2008, and another inspection was ongoing at the time of the accident. The national Non-Fatal Days Lost (NFDL) incident rate for the second quarter of 2008 for underground mines was 4.15. The NFDL rate was 0.65 for the Robinson Run No. 95 Mine.

DESCRIPTION OF ACCIDENT

On Thursday, June 5, 2008, Rick Carson and Gary Hoffman reported to work on the day shift at the Robinson Run Portal. Their duties this day consisted of transporting flat cars loaded with donut fiber crib material from the surface of the Robinson Run Portal area to the 3-West area of the mine. Carson and Hoffman conducted pre-operational checks on the assigned 20 ton locomotives. Hoffman operated company Number 67 locomotive and Carson operated company Number 64 locomotive. Both locomotives were manufactured by General Electric and were the same type. Carson and Hoffman exited the shop area and picked up the two flat cars loaded with the crib materials.

They picked up extra sand to apply to the rails en-route into the mine as instructed by Frank Galambus, foreman. The loaded trip consisted of Hoffman on the lead locomotive pulling two flats of material and Carson operating the trailing locomotive without being coupled to the flats. Prior to entering the mine, Carson asked Hoffman if he needed the second locomotive coupled to the trailing end of the loaded flat cars. Hoffman declined Carson's request to couple with the loaded trip.

The dispatcher gave clearance for Hoffman and Carson to enter the mine for their first trip of this day. Carson was trailing behind Hoffman approximately 300 to 400 feet during underground travel through the mine. They traveled to the 139 switch and stopped without incident. Dave Ault, Foreman operating a trolley jeep had pulled into this switch to allow Hoffman and Carson to travel ahead of him. Clearance was obtained from the dispatcher for the trip to proceed to Number 9 block near the Oakdale bottom. When the trip arrived at the Oakdale bottom area, the dispatcher then authorized clearance for travel to the 3-West area. At 3-West, Hoffman stopped the trip and checked the sanders on the Number 67 locomotive. The trip proceeded inby over the hill and stopped once again at 74 block where Carson observed Hoffman getting off the locomotive, walking around, and checking/filling sanders before proceeding.

When approaching the 101 block area of the 3-West, Carson noticed dust in the air. Carson recognized this condition as an indication that Hoffman was sanding the rails. Carson attempted to contact Hoffman by radio. Carson did not get a verbal response from Hoffman. However, Carson observed the signal light for the Number 101 block electric de-rail had changed, indicating that Hoffman closed the de-rail. Carson deduced Hoffman had the motor and load under control.

Carson's last visual contact of Hoffman was before slowing down as he entered the turns near the Margaret Slope area. Carson proceeded until stopping at approximately the 130 block when he observed Hoffman lying on the mine floor beside the clearance side rail. Carson immediately dismounted his locomotive and ran to assist Hoffman. He failed to get any response from Hoffman. Ault arrived at the accident site and attempted to get a pulse. A pulse was not detected.

INVESTIGATION OF ACCIDENT

On Thursday, June 5, 2008, at approximately 12:01 p.m., MSHA was notified by the national call center that a potentially fatal accident had occurred at the Robinson Run Number 95 Mine. Greg Fetty, Staff Assistant, verbally issued a 103(k) order to ensure the safety and health of miners until an investigation of the accident could be completed. Joshua R. Brady, Mechanical Engineer, and William L Sperry, Coal Mine Safety and Health Specialist (Electrical) were assigned to investigate the accident. Ron Medina, Mechanical Engineer, Technical Support, was assigned to evaluate the Number 67 locomotive.

The investigation was initiated on June 5, 2008, and was conducted in cooperation with the West Virginia Office of Miners' Health, Safety, and Training (WVMHST) along with assistance from the mine operator and employees. Those persons who participated or were present during the investigation are listed in Appendix A of this report. Representatives of MSHA, WVMHST, the operator, and a representative of miners traveled to the underground accident site to examine the scene and begin an investigation of existing physical conditions. Digital photographs and relevant measurements were taken. Sketches and a survey were conducted of the site. The electrical components and mechanics of the Number 67 locomotive were tested and examined on June 5, 2008, by the Mine Safety and Health Administration, Technical Support Division. The investigation also included a review of training records and examination records. Interviews with persons who had knowledge of the accident were conducted on June 6, 2008. The interviews revealed there were no eye witnesses to the accident.

DISCUSSION

A review of the victim training records revealed Hoffman was an experienced miner with approximately 18 years and 6 months total mining experience with Consolidation Coal Company. Hoffman had operated rail haulage equipment as a general inside laborer**.** Hoffman had worked at this mine for 7 years and 10 months.

The track haulage way where the accident occurred is on a 2.5 % downward grade. There are two airshafts adjacent to the track haulage in the 3-West haulage area which allows the track to accumulate condensation and moisture. Hoffman and Carson had previously transported similar loads through this area.

The locomotive involved in the accident was a General Electric, 20 ton, Serial Number 38972, 250 VDC, Class LME 2020 locomotive. It was manufactured in December, 1973. The operator's deck was located at the inby end of the locomotive and the electrical control system components were at the outby end. The four wheels of the locomotive were powered by a pair of 250 VDC electric motors, one for each axle. All four wheels were braked by a dynamic brake/retarder that functioned by dissipating electrical energy into the resistor bank. The locomotive was also equipped with an air-applied service/emergency brake system that acted on all four wheels. The parking brake was operated manually by turning a wheel in the operator's compartment that was connected to a worm gear and chain mechanism that locked the brake shoes against the wheels. The parking brake was designed to only act on the two wheels located on the "clearance side" of the locomotive. The clearance side is the left side of the track when facing inby. It is also on the side of the track opposite to the trolley wire.

Hoffman was discovered by Carson at the 130 block in the 3-West area; however the Number 67 locomotive and the attached load continued to travel down the 2.5% grade. Physical evidence indicated that the locomotive began to de-rail at the 140 block area for a distance of approximately 1,200 feet inby the victim. The locomotive stopped with the wheels off the track at the 142 block area (An additional distance estimated to be 200 feet). The wheels of the locomotive were off the track 6 inches on the clearance side. There was no damage to the locomotive as the result of the de-railment. The loaded flat cars remained on the track.

Initial observations of the locomotive controls at the accident site indicated that the dynamic brake controller was fully engaged and the air brake handle was also in a fully applied position. Either of these conditions could cause the locomotive to lose traction and begin to skid on the rails. The sanding control handle was found in a position to operate the outby sanders. Sand applied with the outby sanders would not be effective to slow the locomotive in the direction of travel at the time of the accident. The outby sanders dispense sand outby or behind the outby wheels on the outby end of the locomotive, and are ineffective because the wheels and locomotive are traveling in an inby direction. The trolley pole was found in a locked down position. However, it could not be determined if the trolley pole came off the trolley wire before the operator left the compartment. The locomotive is also equipped with a foot-operated man-in-place switch located in the operator's deck. To operate the locomotive, the man-in-place foot switch requires constant pressure. If this foot switch is not held down, the 32 volt control voltage drops to zero and the emergency brake automatically applies. This switch functioned properly when tested.

A conclusive determination could not be made as to use of the controls by the victim immediately prior to the accident or if the control positions were possibly the result of actions by the victim during his exit from the operator's compartment.

The accident investigation team considered all of the possible causes for the accident. After eliminating all others, moisture/condensation on the rails is the only remaining possible cause. A common condition in mines in this region is the deposit of moisture/condensation on the mine rails, which creates a loss of friction between the wheels and the rail. The moisture is deposited on the mine rails when the warm moist outside air is pulled into the mine and it then comes in contact with the cool mine rails. Mine management and the motor crew for this shift acknowledged that the warm, moist air from outside and the cool underground temperature would create slick mine rails. Moisture was found on the mine rails in the area of the accident scene.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic cause of the accident and how to prevent a reoccurrence of a similar accident.

ROOT CAUSE:
The victim was unable to maintain control of the locomotive and loaded trip in the 3-West area due to condensation and moisture on the rails.

CORRECTIVE ACTION:
Safeguard Number 6610422 was issued requiring the operator to apply sand to the rails between the 3-West track spur and the end of the 3-West track haulage near the 170 block prior to each trip of supplies being transported through the area. As a result, the operator retrained 27 miners who are assigned to work in the area, as to the requirements of the safeguard. In addition, the miners who are assigned to operate 20 ton locomotives in this area of mine participated in task training. This area of the mine is in the process of being sealed off.

CONCLUSION

A motorman was fatally injured when he lost control of a 20 ton locomotive. The victim fell, jumped, or was knocked off the motor. The victim was unable to maintain control of the locomotive due to condensation and moisture on the rails.

Bob E. Cornett
District Manager

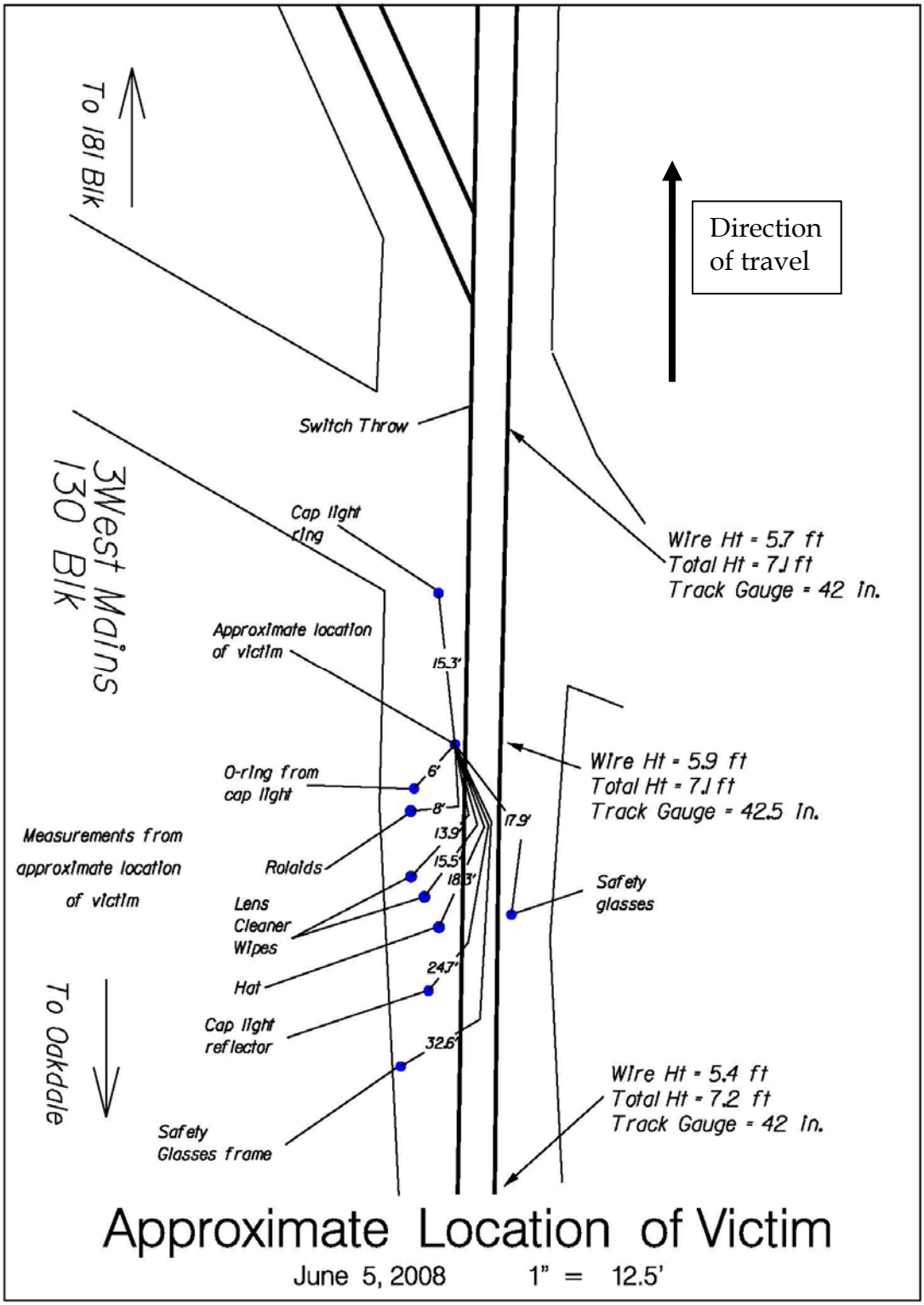
1-27-09
Date

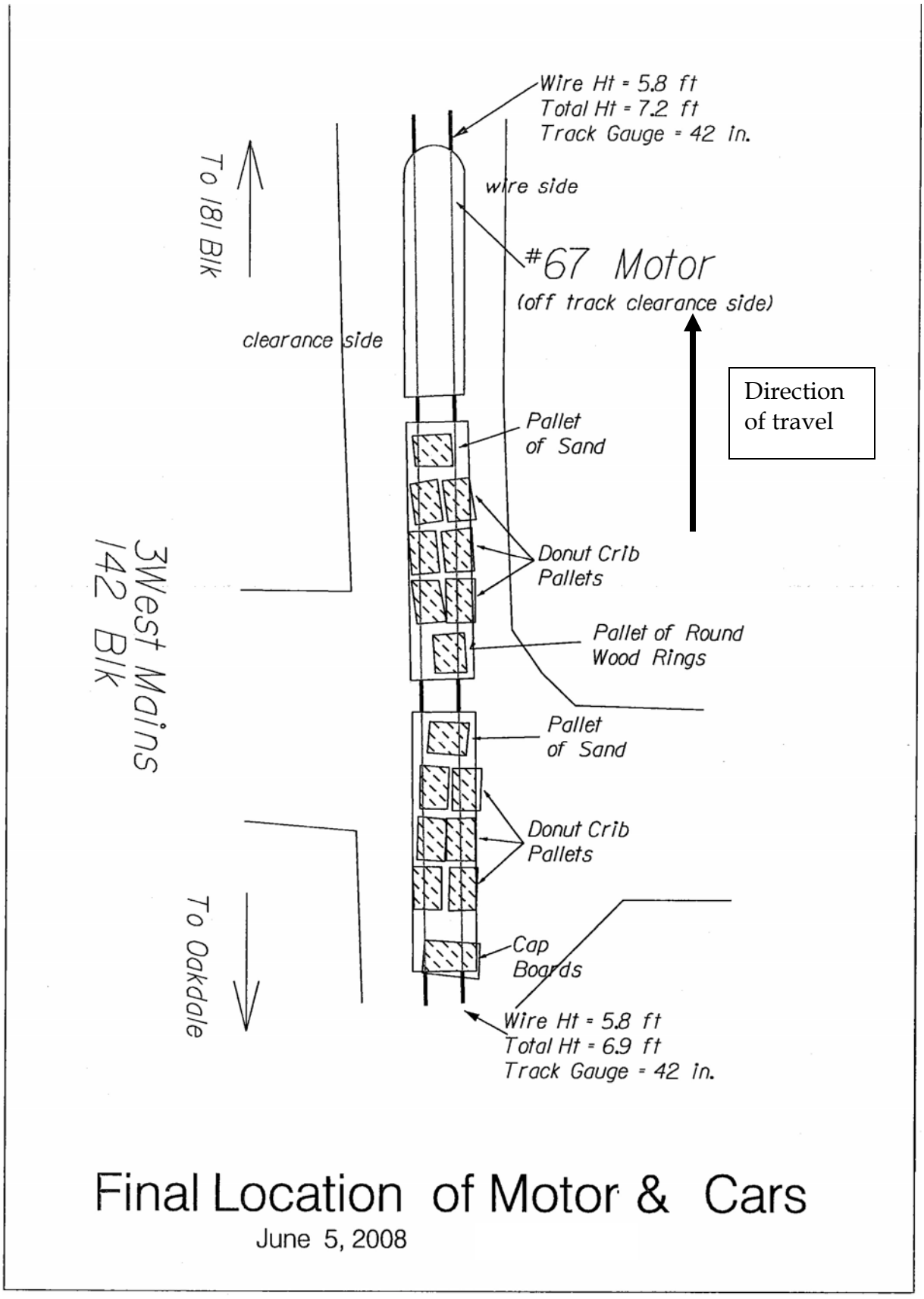
ENFORCEMENT ACTIONS

1. A 103 (k) Order No. 6610786 was issued to assure the safety of the miners.

2. Safeguard No. 6610422 issued under 314(b) requiring the mine operator to apply sand to the rails between the 3-West track spur and the end of the 3-West track haulage near 170 block prior to each trip of supplies being transported through this area. Enough sand shall be applied to each rail to assure motor operators can safely bring their trips to a stop.

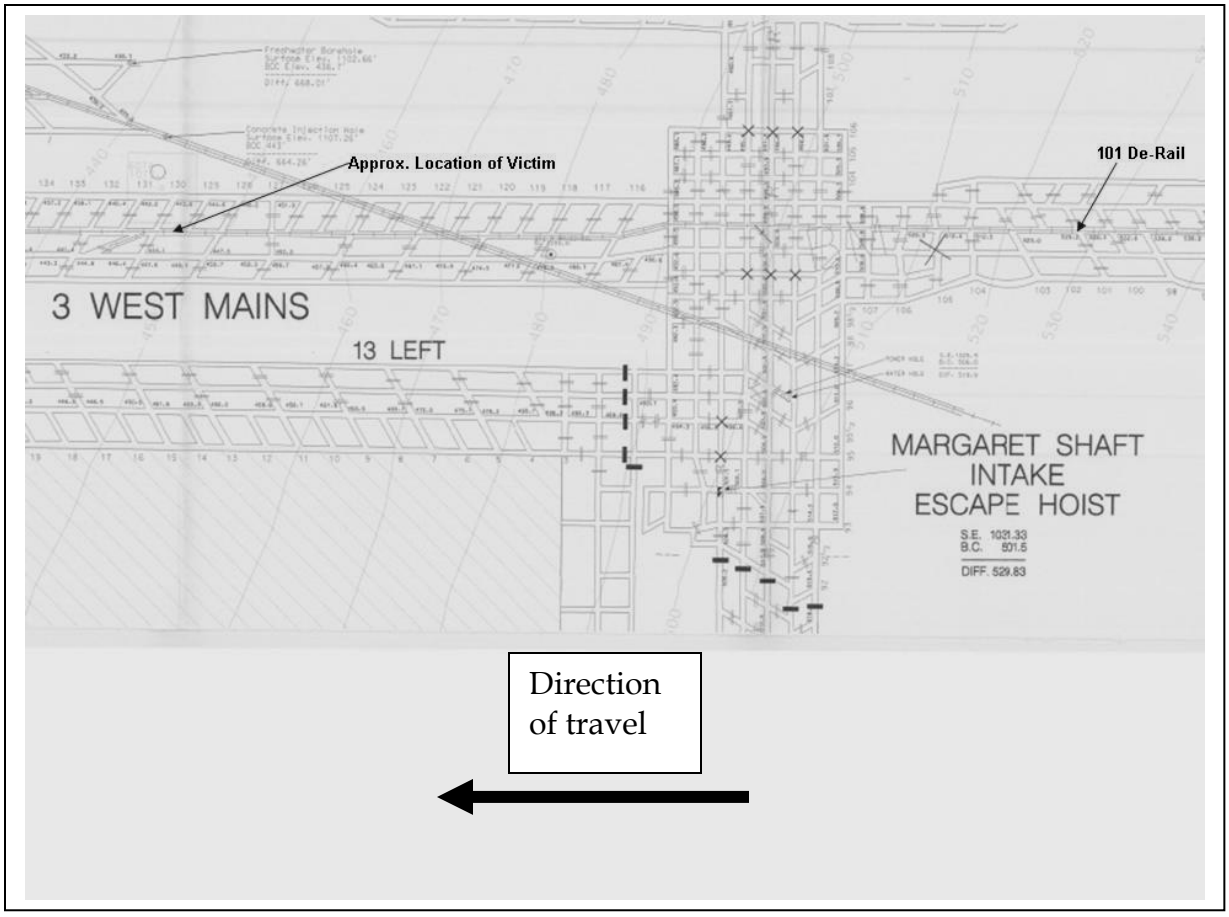
APPENDIX A - Drawing of the Accident Scene





Final Location of Motor & Cars

June 5, 2008


Approx. Location of Victim
101 De-Rail
3 WEST MAINS
13 LEFT
MARGARET SHAFT
INTAKE
ESCAPE HOIST
S.E. 1021.33
B.C. 501.5
DIFF. 529.83
Direction of travel

APPENDIX B - Victim Information

Accident Investigation Data - Victim Information
Event Number: 4 3 5 1 7 3 5

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:
Gary Hoffman	*M*	*55*	*01 Fatal*

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: *a. Date: 06/05/2008* *b.Time: 10:55*

6. Date and Time Started: *a. Date: 06/05/2008 b.Time: 8:00*

7. Regular Job Title: *016 General Inside Labor*

8. Work Activity when Injured: *060 Operate locomotive (air trammer)*

9. Was this work activity part of regular job? Yes | X | No

10. Experience	Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days
a. This Work Activity:	*18*	*25*	*5*	b. Regular Job Title:	*18*	*25*	*5*	c: This Mine:	*7*	*40*	*0*	d. Total Mining:	*18*	*25*	*5*

11. What Directly Inflicted Injury or Illness? *077 Underground mining machines*

12. Nature of Injury or Illness: *370 Multiple injuries*

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: X | CPR: X | EMT: X | Medical Professional: | None:

16. Part 50 Document Control Number: (form 7000-1) *220081700029*

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

APPENDIX C – Persons Participating in the Investigation

Listed below are the persons furnishing information and/or present during the investigation:

MINING COMPANY OFFICIALS

Eric Schubel	Vice President of Northern Operation, Consol
Todd McNair	Superintendent, Robinson Run #95
Michael Nester	Safety Supervisor, Robinson Run #95
Michael Jacquez	Safety Inspector, Robinson Run #95
Rick Marlowe	Manager of Safety, Consol
Dave Clise	Manager of Safety, Consol
Tom Harrison	Project Manager, Robinson Run #95
Marvin McBride	Master Mechanic, Robinson Run #95
Frank Galambus Jr.	Forman, Robinson Run #95

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

Alan Landers	Inspector at Large
John Meadows	Assistant Inspector
Jeff Bennett	Inspector
John Hall	Inspector (Electrical)
Brian Mills	Inspector

MINE SAFETY and HEALTH ADMINISTRATION

Greg Fetty	Staff Assistant, District 3
Joshua R. Brady	Mechanical Engineer (Roof Control)
William L. Sperry	Coal Mine Safety & Health Specialist (Electrical)
Todd M. Anderson	Coal Mine Safety & Health Specialist (Electrical)
Ronald Medina	Mechanical Engineer, Technical Support

UNITED MINE WORKERS OF AMERICA

Chris Yanero	Local 1501 President
Rich Eddie	District 31 President
Ann Martin	Chairman, Safety Committee
Carl Morrris	Safety Committee
John Snyder	Safety Committee
William Higgs	Safety Committee