

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION
(Surface Coal Mine)

Fatal Accident (Other)
December 7, 2008

J & P Equipment Cleaning, Inc. (WNB)
Prestonsburg, Kentucky

at

Thunder Ridge Mine
ICG Hazard, LLC.
Cinda, Leslie County, Kentucky
I.D. No. 15-17746

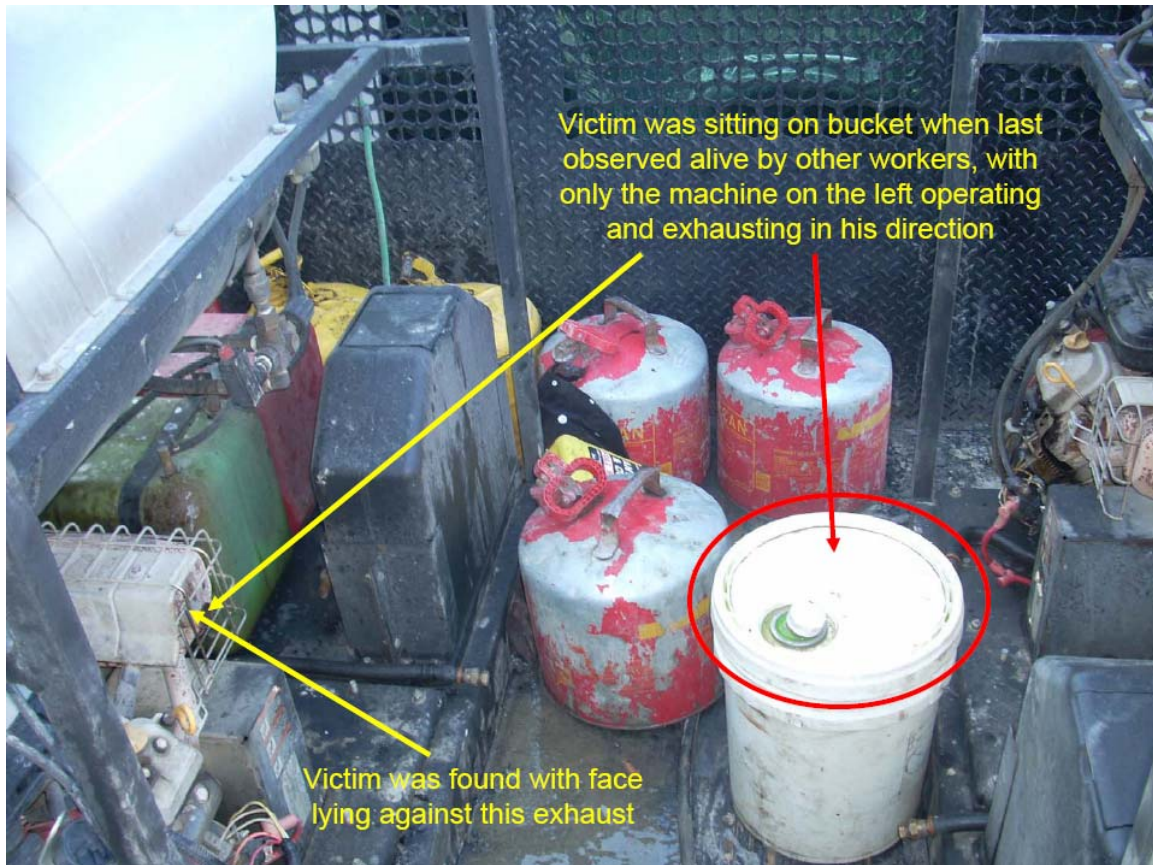
Accident Investigator
David A. Faulkner
Surface Coal Mine Safety and Health Inspector

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

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PHOTOGRAPH OF ACCIDENT SCENE



OVERVIEW

At approximately 11:30 a.m. on Sunday, December 7, 2008, a fatal accident occurred when Paul David Shepherd (victim), age 44, died because of carbon monoxide poisoning while repairing the engine of a hot water pressure washer. The accident occurred at the Bonnett Rock pit area of the ICG Hazard, LLC, Thunder Ridge surface mine, near Cinda, Leslie County, Kentucky. The gasoline-powered engine was running while the victim was making repairs to its charging circuit. When found, the victim was slumped over with his face and head resting on the engine's muffler and the engine still running. The victim had sustained burns to his head, face, and clothing.

Three pressure washers were located on the bed of a C6500 Chevrolet flatbed truck. Besides the pressure washer involved in the accident, a second pressure washer, adjacent to the unit involved in the accident, was not running. The third pressure washer was being used by other personnel to clean a Caterpillar 993K wheel loader located approximately nine and one-half feet from the rear of the truck.

The coroners' report stated that the victim died of acute carbon monoxide intoxication.

GENERAL INFORMATION

The Thunder Ridge Mine is a surface coal mine, located approximately seven miles south of the Old KY 80 and the Leeco Road junction, on Leeco Road at Cinda, Kentucky. The mine, operated by ICG Hazard, LLC, produces bituminous coal and employs 74 people. The mine has two production shifts per day and operates six days per week. Coal is mined from two pits, using wheel loaders, haul trucks, highwall drills and bulldozers. The pit areas are identified as the Bonnett Rock pit and the Bad Creek pit. The Mine produces 2,800 tons of coal per day from the Hazard Number 7, 8, and 9 coal seams. Independent contractors are used, as needed, to perform routine maintenance, clean mobile equipment, and to transport coal from the mine to processing points.

The principal officers for ICG Hazard, LLC are:

William G. FeltnerPresident/General Manager
Roger L. NicholsonAssistant Secretary

The last regular safety and health inspection (E01) conducted by the Mine Safety and Health Administration was completed on September 11, 2008. The mine's Non Fatal Lost Days (NFDL) rate was 0.0 at the time of the accident.

DESCRIPTION OF ACCIDENT

On Sunday, December 7, 2008, Paul David Shepherd and five employees were scheduled to clean mobile equipment at the Thunder Ridge surface mine. The normal starting time is 5:00 a.m. at the West Prestonsburg shop location of J & P Equipment Cleaning, Inc. Shepherd was the owner of J & P Equipment Cleaning Inc. Three employees picked up a C6500 Chevrolet flat bed truck with three rear-mounted pressure washers, while two employees of the same company picked up a Dodge 1 ton flatbed truck with 2 rear-mounted pressure washers and traveled to the Thunder Ridge surface mine. The pressure-wash trucks were followed by Shepherd in his personal pick-up truck. The group arrived at the mine at approximately 7:00 a.m.

Larry David Hamilton, Justin Conley, and Larry Anthony Marsillett were assigned to the C6500 Chevrolet flatbed truck. Ryan Scott Bailey and Aaron Dewayne Collett were assigned to the Dodge 1 ton flatbed truck. The employees proceeded to the water hole and installed a water pump for filling the water supply tanks on the trucks. After the water tanks were filled, both crews returned to the Bonnett Rock pit area to begin cleaning mobile equipment. The three employees in the Chevrolet flatbed truck stopped at the mobile equipment lined up in the Bonnett Rock pit area. The two employees in the Dodge flatbed truck traveled to the location of two highwall drills, located approximately $\frac{3}{4}$ of a mile further around the pit travel way.

The pressure washer unit mounted directly behind the driver's side of the Chevrolet flatbed truck is labeled unit No. 1. The pressure washer unit located directly behind the passengers' side of the cab is unit No. 2, and the rearmost pressure washer unit is labeled unit No. 3.

Some time between 8:00 a.m. to 8:30 a.m., Marsillett, began cleaning a Caterpillar dozer with pressure washing unit No. 3. Unit No. 2 was inoperative due to a mechanical problem that occurred on the previous shift. Shepherd came to the mine site to work on Unit 2. Hamilton and Conley started unit No. 1 and went to the Caterpillar 993K wheel loader. Once started, Conley returned to assist Marsillett with unit No. 3. Soon after unit No. 1 was started and put into operation, Hamilton experienced trouble with the water temperature heat and the water in the pressure washer unit began freezing.

At approximately 9:00 a.m., Shepherd positioned himself between pressure washer unit No. 1 and No. 2 to attempt repairs for the heating system on the No. 1 unit. According to the employees interviewed, Shepherd worked on the pressure washer for approximately two hours. During this period, Shepherd

was sitting on a plastic, five gallon bucket with the engine of Unit No. 1 running and the exhaust discharge blowing in his direction.

Sometime between 10:50 and 11:00 a.m., Bailey and Collet, returned to the location of the other employees while en route to refill their water tank. Bailey stopped and informed Shepherd that the heating element on one of their pressure washer units had become inoperative. Shepherd was positioned between the No. 1 and No. 2 pressure washer units at this time. Shepherd acknowledged the problem with the pressure washer unit on the Dodge truck and Bailey continued toward the water hole. It took approximately 30 minutes for Bailey and Collett to refill the truck's water tank. After refilling the water tank, Bailey and Collett drove back through the area where Shepherd had been performing repairs. During interviews, Bailey stated that it appeared Shepherd was continuing repairs at the time, but was unsure of Shepherd's true condition when he and Collett passed back through the area.

At approximately 11:15 a.m., Hamilton asked Shepherd for a nozzle for his pressure washer. Shepherd got up and retrieved a nozzle for Hamilton and returned to his repair work.

At approximately 11:30 a.m., Conley returned to the truck, where he observed Shepherd slumped over the exhaust muffler of Unit No. 1. According to Conley, Shepherd was unresponsive. Conley immediately contacted Hamilton and Marsillett for help. Before reaching the location of the highwall drills, Bailey and Collett received a call over the C.B. radio from Conley, who stated that something was wrong with Shepherd and he needed help.

Upon arrival, Marsillett and the other employees removed Shepherd from the flatbed truck and placed him on the ground where Collett attempted CPR. Shepherd was not responsive. Conley left the accident scene to get help, while Marsillett called 911.

The mine Medical Emergency Technician (MET), Chris Gross, checked Shepherd and found no vital signs. The Wooten, KY Fire & Rescue personnel arrived at the scene, followed by Trans-Star Ambulance Service. Shepherd was pronounced dead at 12:50 p.m. by Leslie County Deputy Corner Jimmy D. Couch.

INVESTIGATION OF ACCIDENT

The MSHA call center was notified of the accident at approximately 11:58 a.m., on December 7, 2008. Initial notification to the call center was made by Roger Neace, Safety Director for ICG Hazard, LLC. The call center notified Eddie Sparks, Supervisory Coal Mine Safety and Health (CMS&H) inspector for the Barbourville, Kentucky field office. An investigation team was formed.

David Faulkner, CMS&H inspector/accident investigator, and Dannie W. Lewis, CMS&H inspector, traveled to the accident scene, meeting Irvin T. Hooker, District Manager, Jim Langley, Assistant District Manager, and Kevin D. Bruner, Supervisory CMS&H inspector. A 103(k) order was issued to ensure the safety of the miners and to preserve the accident scene. Preliminary information was gathered and the accident scene was examined.

James L. Angel, Mechanical Engineer from the Mechanical & Engineering Safety Division for MSHA's Approval and Certification Center was contacted to assist with the investigation. Alice I. Blanton, from MSHA Educational Field Services also participated in the accident investigation.

Interviews were conducted on December 9, 2008, at the Kentucky Office of Mine Safety and Licensing (OMSL) in Martin, Kentucky. The list of persons interviewed appears in Appendix B.

DISCUSSION

The investigation found, that on the day of the accident, Mr. Shepherd was working on the gasoline engine for approximately two hours, although not continuously. He was sitting on a plastic bucket, located between the two pressure washers, while working on the engine. Personnel working in the area estimated that approximately 15 minutes passed between the time Shepherd was last observed working on the engine, and when he was discovered slumped over the muffler.

Weather Conditions

At the time of the accident, the skies were clear, the temperature was 23 degrees, Fahrenheit, and the winds were calm.

Physical Factors

1) GENERAL MACHINE INFORMATION

The pressure washer was mounted on a Chevrolet Model C6500 truck with a flatbed. Two additional pressure washers were mounted on the truck.

2) ACCIDENT SCENE:

A partial enclosure for the entrapment of exhaust gasses was created by the Chevrolet C6500 truck's flatbed end plate next to the cab, the pressure washers on each side of the flatbed, and the 1,300 gallon tank to the rear of the pressure washers. Exhaust from mufflers of the No. 1 and No. 2 unit pressure washers was directed into an area between the two pressure washers, approximately 25-3/4" wide by 49-1/2" long, by 45" high. At the time of the accident, the flatbed truck was located in an open environment, outside of any buildings or enclosures. The No. 1 unit was the only pressure washer running at the time of the accident.

3) PRESSURE WASHER AND BRIGGS & STRATTON ENGINE: The engine was started without difficulty, by using the pull rope. No engine operation problems were noted, such as smoking or rough idling. The No. 1 unit air filter was dusty, but not clogged. No leakage of gasoline was observed. Some minor oil leakage was observed, but most of the oil leakage was located on the opposite side of the engine from where the victim was found. There was no evidence of a fire on the engine.

4) CARBON MONOXIDE GAS: Warnings on the hazards of carbon monoxide were posted by the pressure washer manufacturer and by the engine manufacturer.

The National Research Council short-term exposure Emergency Exposure Guidance Levels (EEGLs) for carbon monoxide are:

10-minute EEGL: 1,500 parts per minute (ppm)

30-minute EEGL: 800 ppm

60-minute EEGL: 400 ppm

24-hour EEGL: 50 ppm

A lethal concentration is considered (Lefaux 1968) 4,000 ppm for 30 minutes. The coroner's report stated that the victim died of acute carbon monoxide intoxication, with a blood carboxyhemoglobinemia of 71.4%.

Summary of Findings

The autopsy indicated that the cause of death was acute carbon monoxide intoxication and the manner of death was accidental - inhaled exhaust from a steam cleaning unit, while performing repair work.

Although warnings on the hazards of carbon monoxide were posted by the pressure washer manufacturer and by the engine manufacturer, the warnings may not have been adequate or sufficiently specific to alert the victim that a carbon monoxide hazard can also exist when the pressure washer is used outdoors.

ROOT CAUSE ANALYSIS

An analysis was conducted to determine the most basic causes of the accident that were correctable through reasonable management controls. During the analysis, a causal factor was identified that, if eliminated, would have either prevented the accident or mitigated its consequences. Below, is the causal factor identified during analysis, and the corresponding corrective action implemented to prevent a recurrence of the accident.

Causal factor: The standards, policies, and procedures used by the mine operator did not ensure that safe working conditions were provided for all employees. Repairs being performed on the Mi-T-M Corporation, hot water pressure washer, were not made from a safe location, with the gasoline engine off. The victim was overcome by carbon monoxide, resulting in a fatal accident, caused by acute carbon monoxide intoxication.

Corrective actions: The mine operator developed and implemented a plan to prevent a similar occurrence of this accident. The miners were trained in accordance with this plan. The No. 1 pressure washer unit was dismantled and removed from the truck. The exhaust systems on the remaining pressure washer units were redirected to expel the exhaust gases to less confined work spaces.

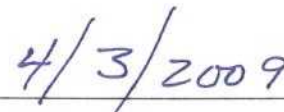
CONCLUSION

The victim was positioned directly in the engine exhaust stream and in an area that would have partially obstructed any air movement from quickly dispersing the exhaust gas.

There were no eyewitnesses to the accident. The investigation established that Paul David Shepherd was overcome by the carbon monoxide from the exhaust gas of the pressure washer's gasoline engine. The coroner's report stated that the victim died of acute carbon monoxide intoxication.



Irvin T. Hooker
District Manager



Date

ENFORCEMENT ACTIONS

Order No. 8334744 was issued to ICG Hazard, LLC on December 7, 2008, under the provisions of Section 103(k) of the Mine Act:

A verbal order was issued to Roger Neace at 12:30 p.m. A Fatal accident has occurred at the Bonnett Rock area of this mine while employees were pressure washing mobile equipment. This order is issued to assure the safety of all persons at this operation. The order prohibits all activity at or around the Bonnett Rock area adjacent to and the involved Chevrolet C6500 steam cleaning truck, S/N 1GBJ6C1397F408716, until MSHA determines that it is safe to resume normal mining operations at this location. The mine operator shall obtain prior approval from an authorized representative for all actions to correct and/or restore operations to the affected area.

Citation No. 8334889 issued to J & P Equipment Cleaning, Inc. (WNB) 30 CFR. 77.404(c).

The victim performed repairs on the Mi-T-M Corporation, hot water pressure washer, while the gasoline-powered engine was operating. As a result, Paul David Shepherd, owner and employee of the operator, was overcome by carbon monoxide and died from acute carbon monoxide intoxication.

APPENDIX A

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

ICG Hazard, LLC Officials & Employees

William G. Feltner..... President/General Manager, ICG Hazard, LLC
Rodney Campbell.....Surface Operations Manager, ICG Hazard, LLC
Roger Neace Safety Director
Carl Collins Area Manager
Dwayne Couch..... Coal Manager
Donnie GrossForeman
Chris Gross.....Foreman/MET
Earl BowlingMaintenance Manager
George Gilbert Drill operator

I & P Equipment Cleaning, Inc. (WNB) -Employees

Jeremy Shepherd Victims' Son
Justin Conley..... Steam Cleaner operator/Crew Leader
Larry Anthony Marsillett.....Steam Cleaner operator
Larry David Hamilton.....Steam Cleaner operator
Ryan Scott Bailey.....Steam Cleaner operator
Arron Dewayne Collett.....Steam Cleaner operator

Kentucky Office of Mine Safety & Licensing

Tracy Stumbo.....Chief Accident Investigator
Greg Goins Deputy Chief Accident Investigator
Wes Gearheart OMSL Electrical Inspector
Gene Adams..... Surface Safety Analysis
Ralph Crawford..... Inspector Principal
Randy Turner..... Inspector

Mine Safety and Health Administration

David A. Faulkner..... CMS&H Surface Inspector/ Accident Investigator
Kevin D. Bruner..... Supervisory CMS&H/ Accident Investigator
Dannie W. LewisCMS&H Inspector
Charles J. MaggardSupervisory CMS&H Electrical Inspector
Michael D. WalkerCMS&H Electrical Inspector
Alice I. Blanton Educational Field Services
James L. Angel..... Mechanical Engineer, Mechanical Safety Division
MSHA Approval and Certification Center
Ronnie L. BrockDistrict 7 Accident Investigation Coordinator
Jim Langley Assistant District Manager
Irvin T. HookerDistrict Manager

APPENDIX B
List of Persons Interviewed

Other Personnel

Jimmy D. Couch.....Leslie County Deputy Coroner

Justin Conley..... Steam Cleaner operator/Crew Leader

Larry Anthony Marsillett.....Steam Cleaner operator

Larry David Hamilton.....Steam Cleaner operator

Ryan Scott Bailey.....Steam Cleaner operator

Arron Dewayne Collett.....Steam Cleaner operator

APPENDIX C

MSHA Form 7000-50b & c

Accident Investigation Data - Victim Information

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



Event Number: **4 4 5 1 1 5 8**

Victim Information: 1												
1. Name of Injured/ill Employee: <i>Paul D. Shepherd</i>			2. Sex: <i>M</i>	3. Victim's Age: <i>44</i>		4. Degree of Injury: <i>01 Fatal</i>						
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 12/07/2008 b. Time: 12:50</i>						6. Date and Time Started: <i>a. Date: 12/07/2008 b. Time: 6:00</i>						
7. Regular Job Title: <i>149 Owner/operator of steam cleaning company</i>				8. Work Activity when Injured: <i>039 Repairing steam cleaner</i>				9. Was this work activity part of regular job? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
10. Experience		Years	Weeks	Days	b. Regular	Years	Weeks	Days	c. This	Years	Weeks	Days
a. This									Mine:			
Work Activity:		<i>16</i>	<i>0</i>	<i>0</i>	Job Title:	<i>16</i>	<i>0</i>	<i>0</i>		<i>4</i>	<i>0</i>	<i>0</i>
11. What Directly Inflicted Injury or Illness? <i>023 Acute Carbon Monoxide Intoxication</i>						12. Nature of Injury or Illness: <i>390 Acute Carbon Monoxide Intoxication</i>						
13. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input checked="" type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>												
14. Company of Employment: (If different from production operator) <i>J & P Equipment Cleaning, Inc.</i>						Independent Contractor ID: (if applicable) <i>WNB</i>						
15. On-site Emergency Medical Treatment: Not Applicable: <input type="checkbox"/> First-Aid: <input type="checkbox"/> CPR: <input checked="" type="checkbox"/> EMT: <input type="checkbox"/> Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>												
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>						

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? <input type="checkbox"/> Yes <input type="checkbox"/> No				
10. Experience		Years	Weeks	Days	b. Regular	Years	Weeks	Days	c. This	Years	Week	Days
a. This									Mine:			
Work Activity:					Job Title:							
11. What Directly Inflicted Injury or Illness?						12. Nature of Injury or Illness:						
13. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>												
14. Company of Employment: (If different from production operator)						Independent Contractor ID: (if applicable)						
15. 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"/>												
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? <input type="checkbox"/> Yes <input type="checkbox"/> No				
10. Experience		Years	Weeks	Days	b. Regular	Years	Weeks	Days	c. This	Years	Week	Days
a. This									Mine:			
Work Activity:					Job Title:							
11. What Directly Inflicted Injury or Illness?						12. Nature of Injury or Illness:						
13. Training Deficiencies: Hazard: <input type="checkbox"/> New/Newly-Employed Experienced Miner: <input type="checkbox"/> Annual: <input type="checkbox"/> Task: <input type="checkbox"/>												
14. Company of Employment: (If different from production operator)						Independent Contractor ID: (if applicable)						
15. 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"/>												
16. Part 50 Document Control Number: (form 7000-1)						17. Union Affiliation of Victim:						



Event Number: 4 4 5 1 1 5 8

Independent Contractor Information: 1

1. Company Name: <i>J & P Equipment Cleaning, Inc.</i>		2. MSHA ID Number: <i>W N B</i>		3. Type of Independent Contractor: <i>10 Other type of work</i>	
4. Nature of Contract Work: <i>Cleaning of Mobile Equipment</i>			5. Number of Independent Contractor employees On-Site at Time of Accident: a. Underground: b. Surface: <i>6</i>		
6. Independent Contractor Officials:					
	Title	Name	Address		
<i>[On-Site]</i>	<i>President/Owner/operator</i>	<i>Paul D. Shepherd</i>	<i>P.O. Box 875, Prestonsburg, KY 41653</i>		
<i>[Other]</i>	<i>Vice-President</i>	<i>Jeremy Shepherd</i>	<i>P.O. Box 875, Prestonsburg, KY 41653</i>		

Independent Contractor Information:

1. Company Name:		2. MSHA ID Number:		3. Type of Independent Contractor:	
4. Nature of Contract Work:			5. Number of Independent Contractor employees On-Site at Time of Accident: a. Underground: b. Surface:		
6. Independent Contractor Officials:					
	Title	Name	Address		

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1. Company Name:		2. MSHA ID Number:		3. Type of Independent Contractor:	
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6. Independent Contractor Officials:					
	Title	Name	Address		