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

REPORT OF INVESTIGATION
Surface Coal Mine

Fatal Powered Haulage Accident
September 17, 2003

Twilight MTR Surface Mine
Progress Coal
Twilight, Boone County, West Virginia
ID No. 46-08645

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PHOTOGRAPHS OF THE ACCIDENT SITE

Pictures of the Euclid R190 Rock Truck and the Ford E-350 Portal Van

OVERVIEW

On September 17, 2003, at approximately 6:00 a.m., William P. Birchfield, age 37, a dozer operator, and Rodney W. Sheets, age 47, a highwall drill operator, both employed by Progress Coal were fatally injured when the Ford E-350 portal van they were passengers in was run over by a Euclid R190 rock truck in the 2500 Hitachi Back-Hoe Pit (2500 Hoe Pit) at the Twilight MTR Surface Mine. Matthew L. Adkins, age 28, track-hoe operator and driver of the portal van, received serious injuries as a result of the accident.

Prior to the accident, a lack of proper communication between the portal van driver and the rock truck driver resulted in the rock truck driver mistaking the location of the van. The portal van approached the rock truck from the off-side blind spot, without first receiving positive confirmation from the rock truck driver, and pulled in front of the rock truck to deliver supplies. The accident then occurred as the driver moved the rock truck forward without first making certain, by signal or other means, that all persons were clear. An inoperable strobe light on the roof of the van also contributed to the accident, as it could have alerted the rock truck driver of the presence of the van.

GENERAL INFORMATION

The Twilight MTR Surface Mine located near Twilight, Boone County, West Virginia, is operated by Progress Coal, a subsidiary of Massey Energy Company. The mine employs 153 persons and normally operates two production shifts per day, six days per week. An average of 19,000 tons of coal is produced daily from five pits. Coal is transported from the pits by Caterpillar Model 777 coal haul trucks to a series of stacking tubes equipped with underground feeders which transfer the coal to a conveyor belt system. Coal is transported via the conveyor belt system for a distance of approximately 12 miles to the Elk Run Coal, Inc., Chess Processing Plant.

The accident occurred in the 2500 Hoe Pit, which was mining the Chilton Coal Seam. Equipment assigned to the 2500 Hoe Pit consisted of a track-hoe, a rotary highwall drill, a bulldozer, and up to three rock trucks. Radio communication was provided between equipment operators on the property. Different pits or mine areas used different radio channels. The 2500 Hoe Pit utilized channel three of the company UHF/FM radio system.

The accident occurred at approximately 6:00 a.m. The weather was clear in the pit area and it was still dark. Sunrise on this morning was at approximately 7:10 a.m.

Equipment operators, with the exception of the rock truck drivers, are transported from a parking lot to their work sites via passenger vans or converted school buses. Rock trucks are typically driven directly from the parking lot.

The principal officers for Progress Coal are:

Tom Meikle..... President

Matthew Cook..... Operations Manager

Tommy Grant..... Superintendent

H. Tyrone Coleman..... Human Resource Director and Safety Manager

Bryan Petroski..... Safety Director

The last regular inspection of this operation was completed on June 25, 2003. The Non-Fatal Days Lost (NFDL) Incidence rate for the quarter prior to the accident was 2.36 at the Twilight MTR Surface Mine and 2.60 for the nation's surface coal mines.

DESCRIPTION OF THE ACCIDENT

At approximately 5:30 a.m., on September 17, 2003, members of the day shift crew arrived in the mine parking lot. There, William P. Birchfield, dozer operator, Rodney W. Sheets, highwall drill operator, Glen Akers, dozer operator, and Lawrence Fox, rock truck driver, boarded a Ford E-350, portal van driven by Matthew L. Adkins, track-hoe operator. Prior to leaving the parking lot, Gordon "Stan" Mills, rock truck driver, asked Adkins to obtain toilet paper supplies from the warehouse for him.

Adkins, with passengers Birchfield, Sheets, Akers, and Fox, drove the portal van approximately one mile to the warehouse, where he parked for five to seven minutes while obtaining supplies. He then drove the portal van approximately 400-500 feet from the warehouse, where he dropped off Fox at his rock truck before proceeding to James Creek Road, where he dropped off Akers at his dozer. Adkins, Birchfield, and Sheets then traveled to the 2500 Hoe Pit, located approximately 1½ miles from the warehouse.

Meanwhile, Mills conducted a pre-operational check of his rock truck and traveled to the 2500 Hoe Pit, stopping approximately 270 feet away from the Hitachi Model 2500 Track-hoe. Edmond Dotson, another Euclid R190 rock truck driver, also completed a pre-operational check and drove his rock truck from the parking lot toward the 2500 Hoe Pit. While traveling to the pit, Dotson observed the portal van approaching the intersection of the James Creek Road and the 2500 Hoe Pit access road. Dotson stopped and allowed the van to cross in front of him. The van then proceeded into the pit ahead of Dotson's rock truck.

Shortly before 6:00 a.m., Charles Hager, mechanic, finished servicing the 2500 Track-hoe. Hager left the track-hoe dome lights and small entrance lights illuminated as he left the pit. He passed Mills' rock truck, which was still parked in the pit approximately 270 feet from and facing the track-hoe. Hager then passed the portal van at the bottom of the 2500 Hoe Pit entrance ramp, followed by Dotson, who was now approximately halfway down the 2500 Hoe Pit access road.

As Adkins drove the portal van into the pit, he observed Mills' parked rock truck. Dotson stopped his rock truck approximately 300 feet behind Mills' truck and started cleaning the interior of his truck. As the portal van approached to within approximately 50-60 yards of Mills' truck, Adkins radioed a message for Mills to get his supplies. Adkins intended for Mills to climb down from the truck cab and meet him at the rock truck's current location. To facilitate transfer of supplies to Mills, Adkins parked the portal van in front of the rock truck bumper, with the driver-side door of the van aligned with the access ladder on the off-side of the truck.

Mills was leaning down, getting ear plugs out of his dinner bucket, and did not see the headlights on the approaching portal van when he heard Adkins' transmission. He looked toward the track-hoe, which Adkins was scheduled to operate that shift, saw its illuminated dome light, and assumed that Adkins had called from the track-hoe. Mills

moved the truck forward, with the intent of meeting Adkins at the track-hoe, striking the portal van with his right front bumper.

Dotson heard someone say, “Whoa Stan” over the radio. He looked toward the rock truck and saw the van being shoved sideways. Dotson grabbed his radio microphone and started shouting for Mills to stop. Upon hearing Dotson’s transmission, Mills applied the truck’s brake. By the time the truck stopped, the van had rolled over onto its roof and was crushed under the rock truck’s bumper/frame and right front tire. Not yet realizing that he had struck the van, Mills asked if he needed to come the other way. Dotson replied, “No Stan, stop, you’ve run over the van.”

Dotson switched his radio to channel one and requested help, Emergency Medical Technicians, and for someone to call 911. Mills set the brakes and dismounted the rock truck. Dotson drove to the accident scene, where he parked his truck and then proceeded to the van to provide assistance.

Shortly thereafter, mine emergency personnel arrived on the scene and initiated rescue and recovery operations. The Whitesville and Van Fire and Rescue Departments, Boone County Ambulance Authority, Boone County Sheriff’s Department, and the West Virginia State Police responded to the accident site. Adkins was removed from the van at approximately 7:15 a.m. and was transported to the Charleston General Hospital. Birchfield and Sheets were pronounced dead at 6:37 a.m. They were removed from the van at approximately 9:30 a.m. and were transported to Boone Memorial Hospital before being transferred to the West Virginia Medical Examiner’s Office in Charleston, West Virginia. The Boone County Sheriff’s Department and the West Virginia State Police conducted an investigation and obtained statements from witnesses.

INVESTIGATION OF THE ACCIDENT

The Mine Safety and Health Administration office in Uneeda, West Virginia, was officially notified at approximately 7:07 a.m. of the accident. Upon the notification, Inspector John F. Workman verbally issued an order pursuant to section 103(k) of the Mine Act to ensure the safety of persons at the mine until an investigation of the accident could be completed. Workman and Clyde Gray Jr. from the Uneeda office were immediately dispatched to the scene. They were later joined at the scene by Sherman Slaughter, CMI (Accident Investigator) from the Mt. Hope office, and Michael K. Woodrome, Assistant Chief, Tri-State Initiative. Upon arrival, Slaughter provided the operator with a written copy of the 103(k) Order. Preliminary information was gathered, photographs taken, and the accident scene was examined. MSHA's Office of the Administrator assembled an investigation team and dispatched them to the scene.

On September 18, 2003, the accident investigation team traveled to the accident site. The team consisted of: John M. Pyles, Assistant District Manager, and Alice I. Blanton, Coal Mine Safety and Health Inspector/Accident Investigator from District 7, Barbourville, Kentucky; Michael M. Zenone, Mine Safety and Health Specialist/Accident Investigator from District 2, Clearfield, Pennsylvania; John S. South, Supervisory Special Investigator, District 6, Pikeville, Kentucky; John W. Fredland, Civil Engineer, and Steven J. Vamossy, Civil Engineer, Mine Waste and Geotechnical Engineering Division, Technical Support, Pittsburgh, Pennsylvania; Richard A. Skrabak, Mechanical Engineer, Mechanical Safety Division, Triadelphia, West Virginia; Donald W. Conrad, Mine Safety and Health Specialist Training, Educational Field Services, Johnstown, Pennsylvania; and Michael K. Woodrome, Assistant Chief, Tri-State Initiative, Beckley, West Virginia. An on-site investigation and subsequent testing and evaluation of the Euclid R190 rock truck and the Ford E-350 portal van were conducted. A spot inspection was conducted concurrently with the investigation to address any enforcement issues for violations that did not contribute to the accident. MSHA and the West Virginia Office of Miners Health, Safety, and Training (WVOMHST) jointly conducted the investigation with the assistance of mine management and other miners.

Formal interviews were conducted at the MSHA field office in Uneeda, West Virginia, each day during September 22 through September 25, 2003. Follow-up interviews were also conducted on October 10, 2003 at Progress Coal's office in Uneeda, West Virginia. A total of 17 formal interviews were conducted and transcribed. None of those interviewed requested that their statements be kept confidential. A re-creation of the accident was conducted on September 25, 2003, at the accident site. This was conducted at approximately 6:00 a.m., utilizing the Euclid R190 rock truck and a similar Ford E-350 portal van.

DISCUSSION

Mining Equipment

Euclid R190 Rock Truck

The Euclid R190 rock truck involved in the accident was a rigid frame electric drive haul truck weighing over 126 tons empty and capable of hauling payloads in excess of 190 tons. This rock truck, Serial Number 340SDC75593, was purchased new in 1996. Progress Coal's designation number for this truck was RT 729.

The truck was equipped with a Cummins KTTA 50-C turbo-charged diesel engine rated at 1800 horsepower. The drive system consisted of a General Electric (GE) alternator directly mounted to the engine and GE Model 788BS wheel motors on the rear wheels.

The truck was equipped with an all hydraulic braking system with a separate circuit for the front dry disc brakes and dual circuits for the rear dry disc brakes. The parking brake was a spring applied, hydraulically released dry disc brake on the rear axle. The truck is equipped with an electric retarding system.

The overall length of the rock truck was approximately 42 feet and the overall width was approximately 22 feet. The bottom of the rock truck's front bumper was approximately 56 inches off the ground. The top of the front bumper was approximately 68 inches off the ground.

The rock truck was equipped with Bridgestone 37.00R57 Radial tires. The tire radius was approximately 5 ½ feet and the width of the tread portion of the tire was approximately 35 inches. The circumference of the tires was approximately 35 feet.

The level line of sight from the driver's seat was approximately 16 feet above ground. The rock truck driver's view to the front of the truck was limited by the truck's hood and to the off-side (right) by the truck's electrical grid box. In front of the rock truck's right side, a blind spot extended for approximately 60 feet to ground level. Directly to the rock truck driver's right, a blind spot extended for approximately 240 feet to the ground. The truck was originally equipped with the standard right and left flat mirrors that were approximately 10 inches wide and 30 inches high. An auxiliary mirror was added to the right side to view the off-side. All mirrors faced in the rear direction.

Progress Coal installed an Intec CarVision camera system on the Euclid R190 rock truck consisting of three cameras with a CVM 600 monitor in the cab. The camera system was one of the means for the equipment operator to make certain that persons were clear before moving the equipment. The cameras provided a view of the blind areas to the front, off-side, and rear of the truck to assist the driver with viewing these areas.

The camera vision system was installed to operate in two different modes, "Standby," and "On":

- **On Mode** - When the system switch is turned to "On" and a three-position switch is set to view either the front, off-side, or rear camera, the selected view remains on the monitor; except when the truck is shifted into reverse, the rear camera view is automatically displayed. The rear camera view remains displayed until the truck is shifted out of reverse. The view displayed on the monitor then reverts back to the view which had been previously selected.

- **Standby Mode** - Once the rock truck is started, the camera system is in the "Standby" mode as the default setting. In this mode, the monitor remains off until the truck is shifted into reverse. Then the view from the rear camera is automatically displayed on the monitor. Once the truck is shifted out of reverse, the monitor turns off. The camera system was in standby mode when the accident occurred.

At the time of the accident, the front and rear cameras were functional; but the lens cover on the off-side camera would not open, rendering it inoperable. The off-side view would be used when turning the rock truck to the right, which was not the direction of travel at the time of the accident. Therefore, the inoperable off-side camera did not contribute to the accident. Since the truck was moving straight forward, the front camera view should have been selected to show the intended direction of travel. However, since the camera system was in standby mode, the front camera view was not displayed on the monitor before the truck was moved. The portal van would have been visible in the front camera view.

The two front clearance lights and two rear taillights on the rock truck were inoperative. The inoperative lights on the rock truck did not contribute to the accident since they would have provided little illumination of the approaching portal van.

Ford E-350 Portal Van

The portal van involved in the accident was a 1999 Ford Model E-350 XL Super Duty, 12-passenger van, VIN 1FBNE31S2XHA91507. It had been modified to four-wheel drive by the Quigley Motor Company, Inc. Progress Coal's designation for this van was LT 112. At the time of the accident, the van was licensed for highway use in West Virginia. It was equipped with an automatic transmission.

The portal van was white and had a strip of red and white reflective tape along the sides. The van was 212 inches long, 76 inches wide, and 86 inches high. It was equipped with bucket seats for the driver and front passenger, two bench seats for three passengers each, one bench seat for four passengers, and seatbelts.

Progress Coal had equipped the portal van with a StarBright Model 913 roof-mounted strobe light with an amber lens. The strobe light was located in the center of the roof,

crosswise, 20 inches back from the top of the windshield. The strobe light did not have an on/off switch; but was hard-wired so that it would receive power when the ignition switch was in the "on" position. A passenger who was in the van immediately prior to the accident and the portal van driver during the previous shift both stated that the strobe light was not working on the day of the accident.

Accident Scene Information

The rock truck involved in the accident was parked on a bench, off the pit travelway, approximately 15 feet from the bermed edge. It was facing the direction of the Hitachi Model 2500 Track-hoe, which was approximately 270 feet from the truck. The track-hoe's dome light and entrance light had been left illuminated following maintenance which was performed prior to the accident.

The portal van approached the rock truck from the off-side (blind spot area) and stopped in the blind spot immediately in front of the truck, close to the front bumper. Tire marks indicated that the front 10 feet of the portal van was in front of the rock truck. This placed the driver's door of the portal van next to the access ladder on the off-side of the rock truck, which would have allowed the transfer of supplies through the van window to the bumper level of the rock truck.

When the rock truck moved forward, its front bumper contacted the driver's side door of the portal van. An indentation in the driver's door matched the width of the access ladder that hangs down approximately 35 inches from the bottom of the truck's bumper. The ladder was constructed of steel and rubber belting. White paint was observed on the ladder.

Tire tracks from the portal van's driver-side front tire indicated that the van had backed up approximately 18 inches before the van was contacted by the rock truck. The van's shift indicator was found to be in reverse position, and markings on the ground indicated that both of the van's rear tires had spun after contact by the truck. A scrape mark on the ground from the portal van's front driver-side tire indicated the van was shoved approximately 4 ½ feet before the van's front tire was lifted off the ground.

As the rock truck continued forward, the van was rolled over onto its roof and crushed under the rock truck's bumper/frame and the right front tire. Observations and measurements of tire tracks from the rock truck and portal van indicated the rock truck had moved forward approximately 32 feet before stopping. This is approximately one revolution of the rock truck's tires.

Re-creation of the Accident Conditions

A re-creation of the conditions and events leading up to the accident was conducted on September 25, 2003, at the accident site, with all relevant equipment repositioned. The re-creation was conducted at approximately 6:00 a.m., at which time outdoor conditions were dark and the weather was clear, similar to the morning of the accident. MSHA and WVOMHST investigators, mine management, and Progress Coal employees participated in the re-creation.

The Euclid R190 rock truck that was involved in the accident and an identical Ford E-350 portal van, (Progress Coal designation LT 113) were used to re-create the conditions and events up to the time that rock truck moved forward. The van used in the simulation was equipped with a functioning StarBright Model 913 strobe light with an amber lens. The van approached the parked rock truck from the off-side and stopped in front of the truck, simulating the path of the van involved in the accident, as determined by physical evidence and witness statements.

Observations were made from the rock truck driver's seat during the re-creation. As the van approached, its headlights illuminated the ground in the front and to the right of the truck. During this time, the van's headlights were clearly visible from the rock truck driver's seat, even though the van itself could not be seen. As the van pulled in front of the truck, the headlight beams swept the area in front of the truck, but became less evident in the area illuminated by the rock truck's headlights. After the van stopped, its headlights illuminated the berm to the left of the truck, which was visible from the rock truck driver's seat through the windshield. When the strobe light was used, a portion of the truck's handrail was illuminated by the flashing strobe light, which was also visible from the cab of the rock truck.

Tests were also conducted to determine the effectiveness of the camera vision system. Prior to moving equipment, established company procedures required that the camera system be utilized and the view be turned toward the direction of intended travel. The portal van was clearly visible on the monitor, in the front camera view, without the flashing strobe light. Visibility of the portal van in the front camera view was enhanced when the strobe light was operating.

Other physical factors relevant to witness statements were tested. Radio communications were simulated between the van and rock truck and no problems were identified. The dome light of the track-hoe was turned on and the illuminated cab was clearly visible from the cab of the rock truck. Observations from the cab of Dotson's rock truck indicated that he had a clear and unobstructed view of the accident scene. The rock truck horn was tested and operated properly.

Communications

Adkins, the driver of the portal van, communicated by radio with Mills regarding the delivery of supplies, but did not convey his location or effectively communicate his intent. As the portal van approached to within approximately 50-60 yards of Mills' truck, Adkins stated that he radioed to Mills, "Step down here; I've got your supplies." Mills stated he heard Adkins say, "Come and get your [toilet] paper." Dotson in the nearby rock truck stated he heard Adkins say, "Stan, I've got your [toilet] paper, come and get it." Adkins stated that he heard Mills reply to him "OK". Mills was unable to verify that he stated "OK" following the receipt of the radio transmission. Dotson had no recollection of hearing an "OK" response from Mills. Adkins approached the rock truck from the off-side and came to stop in the rock truck's front blind spot.

Typically the track-hoe operator was in the track-hoe before the rock trucks reached the pit. The track-hoe's dome light and entrance lights had been left on following maintenance work performed on the track-hoe prior to the start of the day shift. Testimony indicated that it was unusual for these lights to be left on. Mills indicated that he did not see the approaching van's headlights, in part, because he was bending down to get ear plugs out of his dinner bucket when he received the communication from Adkins. These factors, combined with the lack of clear communications with Adkins, led Mills to believe that Adkins had radioed him from the track-hoe and that he needed to drive over to the track-hoe to pick up the supplies. Mills proceeded to move the truck forward, toward the track-hoe, without first making certain that all persons were clear. He did not sound the horn, utilize the front camera view, confirm his understanding of Adkin's location, or clearly communicate his intent by radio before moving the truck.

Safety Program

At the time of the accident, Progress Coal, had a comprehensive safety program (required by 30 CFR 77.1708) at MTR Surface Mine. As a Massey Energy Company subsidiary, the primary focus of the program came from Massey Energy S-1 and Management Safety Guidelines. Additional mine-specific programs and guidance was provided in the form of Interoffice Memorandums. Safety program objectives and guidance were provided to managers and employees through mandatory training classes, safety meetings, and individual contacts. Although copies of these documents were not always distributed to the miners, those interviewed understood the relevant program requirements.

Flashing lights for vehicles were required in Heavy Equipment Guidelines of S-1 in Section IV, revised June 2000, which stated in part: *"Flashing lights are required for service and maintenance vehicles, graders, bulldozers working on coal stockpiles only, small utility loaders around plants, water trucks, and similar types of vehicles."* Portal vans or other types of mantrips were not specifically listed in the safety program. The operator stated their intent was for all type mantrips to be covered by this section. Witness statements indicated that the strobe light mounted on the portal van was not operational on the morning of the accident (refer to the **Ford E-350 Portal Van** section

of this report). The re-creation of the accident conditions showed that flashes from the strobe light would have been visible to the rock truck operator through the windshield.

Pre-operational checks were addressed in S-1, Section V. Surface Mines and Other Surface Locations, revised September 1998, which stated in part: *"Employees and contractors will use a written checklist for the walk around inspection of the machinery they intend to operate. Any defects found will be reported to the shift supervisor and recorded. The supervisor will determine whether to take the equipment out of service or to operate it and schedule repairs…Proper functioning of controls and safety devices are checked at start-up."* The type or size of the machinery was not specified in this section. The operator stated their intent was for small vehicles, such as portal vans, to be covered by this section. Employees interviewed during the investigation indicated that pre-operational checks on portal vans were required by the operator's safety program, but were being conducted infrequently and inconsistently. Adkins stated that a pre-operational check had not been conducted on the portal van prior to the accident. A check of safety devices at start-up should have detected the inoperable strobe light. Although several individuals witnessed the van operating over the previous two shifts, no one reported this condition to the shift supervisors.

Pre-operational checks for Heavy Equipment Guidelines were listed in S-1, Section IV, revised June 2000, which stated in part: *"Pre-operational checks will be performed by the operators before the equipment is put into operation."* The mine operator provided its employees with a pre-operational safety check list, in book form, to be used by equipment operators to document pre-operational checks of equipment. Mills stated that he conducted the pre-operational check of his rock truck prior to the accident. During the investigation, an inspection of the rock truck found safety defects on the truck that would have been present at the time of the pre-operational check, none of which contributed to the accident (refer to the **Euclid R190 Rock Truck** section of this report). The two front clearance lights and two rear taillights were inoperative. The offside camera lens cover would not open, blocking the camera view of the blind-side area. The camera system was a means for the equipment operator to make certain that persons were clear before moving the equipment. These defects were not recorded and reported to the shift supervisor.

Parking Near Large Mobile Equipment was addressed in a Management Safety Guideline 01-2, effective date of June 15, 2001, which stated in part: *"You must always stay the minimum length of a large rock truck away from the sides and front when parking around large trucks. Always notify the equipment operators of your presence; insure that you have contacted the correct operator by receiving a response from him stating his equipment number."* On September 18, 2002, a non-injury vehicle accident occurred when a mechanic's truck was struck by a rock truck after being parked in front of the right front tire of the rock truck. The rock truck operator moved his vehicle without first sounding a warning or performing a visual check. On November 13, 2002, another non-injury vehicle accident occurred in which a foreman's pickup truck was struck by a rock truck. The foreman had parked directly in front of the rock truck to deliver cleaning supplies when the accident occurred. In both cases, the mine operator

determined that their safety guidelines were not being followed and took disciplinary action following both of these accidents. Subsequently, a "Near Miss Incident Report" and an interoffice memorandum were issued by the operator requiring implementation of the following safety provisions: *"Equipment operators will sound the horn prior to moving the equipment. Equipment/operators will have the cameras if so equipped turned toward the direction of intended travel. Foreman and managers vehicle will use strobe lights in poor visibility, low light levels, and at night. Mobile Equipment Red Zone: No person will approach or park near a piece of large mobile equipment from the rear, offside, or directly in front with less than 50 feet of line of sight area, unless positive confirmation has been received from the operator.* All employees were trained on these provisions during safety meetings. Immediately prior to the fatal accident, Adkins parked the portal van directly in front of the rock truck, where less than 50 feet of line of sight existed, without first receiving confirmation from the rock truck operator that he was aware of the smaller vehicle's location. Also, the rock truck operator did not sound the horn prior to moving the equipment and he did not have the camera turned toward the direction of intended travel. Compliance with any one of these requirements would have likely prevented the accident.

Surface Haulage Truck Cameras were further addressed in Management Safety Guideline 03-1, effective date of May 1, 2003, which stated in part: *"Due to the size and limited vision for individuals operating large rock trucks the following shall be a requirement on haulage trucks larger than 150 tons. Cameras are required to be mounted to monitor the front, off side, and rear areas of the truck. The monitor for the camera shall be positioned in the cab so the operator can visually see all areas covered by the cameras. Note: In the event of a camera malfunction, it must be reported to management and corrected immediately."* This guideline required cameras to be used on the 190-ton rock truck involved in the accident. The malfunctioning lens cover on the off-side camera was not detected during the pre-operational check; therefore, it was not reported or corrected prior to the accident.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted. The following causal factors were identified:

Causal Factor: Established rules, policies, and procedures for moving large mobile equipment were not followed by the rock truck operator. The rock truck driver did not make certain by signal or other means that all persons were clear before moving the equipment. The rock truck operator did not sound the horn or use the camera monitor prior to moving the parked truck.

Corrective Action: Management should monitor and strictly enforce the established policy regarding the use of standardized signals or other means by equipment operators before starting or moving large equipment. Management, in conjunction with equipment operators and camera manufacturers, should evaluate current camera systems use, installation, employee concerns (glare, monitor placement, etc.), and formulate procedures for the optimum use of cameras with regard to forward and offside views. Following the accident, the operator required front line supervisors, safety department personnel, and other members of management to monitor, on a continuing basis, the policy and practices listed in the safety program for consistency, effectiveness, and accountability.

Causal Factor: Established policies and procedures for safely approaching large mobile equipment were not followed by the portal van operator. The portal van was parked directly in front of the rock truck, where less than 50 feet of line of sight existed, without first receiving confirmation from the rock truck operator that he was aware of the smaller vehicle's location.

Corrective Action: Management should routinely observe work habits, monitor communications, and strictly enforce safety rules to ensure compliance with such procedures. Persons approaching large mobile equipment should clearly identify themselves, their intent, and their location, and receive confirmation of any transmission before nearing such equipment. Following the accident, the operator required front line supervisors, safety department personnel, and other members of management to monitor, on a continuing basis, the policy and practices listed in the safety program for consistency, effectiveness, and accountability.

Causal Factor: Procedures were not in place to ensure that pre-operational checks were being performed on mantrips. Employees indicated that pre-operational checks on portal vans were required by the operator's safety program, but were being conducted infrequently and inconsistently. A pre-operational check of the portal van was not conducted on the morning of the accident. A pre-operational check would have identified the inoperable strobe light and prompted corrective measures prior to operating the van in poor visibility conditions.

Corrective Action: Management should evaluate the current pre-operational inspection guidelines and out-of-service criteria. A system of accountability should be implemented

to ensure that pre-operational checks are being conducted and company guidelines are being complied with. The guidelines and accountability system should be monitored on a continuing basis utilizing the frontline supervisors, safety department, and other members of management for consistency, effectiveness, and accountability. Strobe lights should be illuminated on vehicles operating on mine property. Management should monitor strobe light use to ensure that such lights are effective for their mine specific applications. Following the accident, the operator required front line supervisors, safety department personnel, and other members of management to monitor, on a continuing basis, the policy and practices listed in the safety program for consistency, effectiveness, and accountability.

CONCLUSION

The accident occurred because mine management did not adequately and proactively monitor work procedures to ensure that established safety program requirements were being followed and that equipment was in a safe operating condition. The van driver approached the rock truck from the off-side and parked in the truck's front blind spot without effectively communicating his location and intention to the truck driver. The rock truck driver failed to make certain that the area in the front of the truck was clear before moving forward. The inoperable strobe light on the van also contributed to the accident, as it could have alerted the rock truck driver to the presence of the van.

Approved:

Ray McKinney

Ray McKinney
Administrator for
Coal Mine Safety and Health

Date: 1/26/04

ENFORCEMENT ACTIONS

1. A 103(k) Order was issued to Progress Coal on September 17, 2003, to ensure the safety of persons at the mine until an investigation of the accident could be completed.

2. A 104(a) Citation was issued to Progress Coal for a violation of 30 CFR 77.1607(g). On September 17, 2003, the operator of Euclid R190 Rock Truck, RT 729 (Serial No. 340SDC75593), did not make certain by signal or other means that all persons were clear before moving the truck in the 2500 Hitachi Pit and striking a portal van that was parked in front of the truck. Three miners riding in the portal van were injured during the accident, two fatally. Prior to moving the truck; the rock truck operator did not sound the horn, utilize the front camera view, confirm his understanding of the portal van location, or clearly communicate his intent by radio.

3. A 104(a) Citation was issued to Progress Coal for a violation of 30 CFR 77.404(a). On September 17, 2003, the Ford 350 portal van, LT112, was not being maintained in safe operating condition. The Starbright Strobe Light, Model 913, which was provided on the van for safe operation around large mobile equipment during periods of low visibility, was not operating. Prior to September 17, 2003, two similar accidents demonstrated that the strobe light was necessary for safe operation at this mine. At approximately 6:00 a.m. (while it was still dark), the portal van was struck by a Euclid R190 rock truck as it delivered supplies and personnel to the 2500 Hitachi Pit. Three miners riding in the portal van were injured during the accident, two fatally. An investigation of the accident determined that the rock truck operator was not aware of the van's location and that the strobe light, if used, could have alerted the rock truck driver to the presence of the van. This condition existed for at least one shift prior to the accident and could have been detected during a pre-operational examination of the portal van.

APPENDIX A

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

Progress Coal

Tom Meikle	President
Matthew Cook	Operations Manager
Mark Heath	Counsel for Progress Coal

Massey Energy

Drexel Short	Vice President
Frank Foster	Corporate Safety Director
Michael Snelling	Surface Mine Director

Miner's Representative

Robert B. Allen	Counsel for Matthew Adkins and Gordon Mills

West Virginia Office of Miner's Health, Safety, and Training

Terry Farley	Accident Investigator
Randall Bailey	Surface Inspector
Harry T. Linville	Inspector at Large

Mine Safety and Health Administration

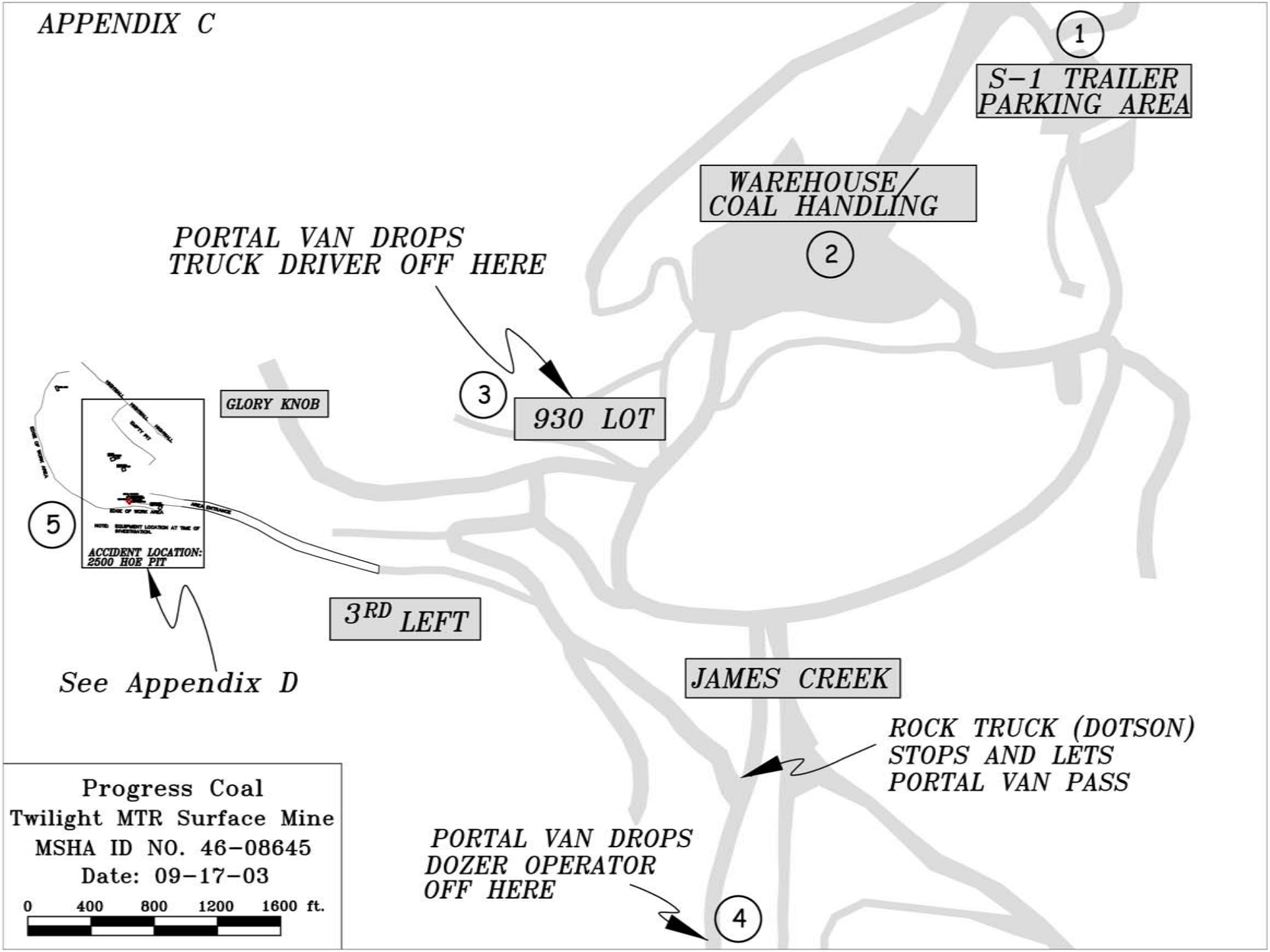
John M. Pyles	Assistant District Manager, District 7
Michael K. Woodrome	Assistant Chief, Tri-State Initiative
John S. South	Supervisory Special Investigator, District 6
Michael M. Zenone	MS&H Specialist/Accident Investigator
Alice I. Blanton	CMS&H Inspector/Accident Investigator
John W. Fredland	Civil Engineer, Technical Support
Richard A. Skrabak	Mechanical Engineer, Technical Support
Steven J. Vamossy	Civil Engineer, Technical Support
Donald W. Conrad	MS&H Specialist/Training, EFS
Sherman Slaughter	MS&H Specialist/Accident Investigator
John Workman	MS&H Specialist
Clyde Gray	CMS&H Inspector

APPENDIX B

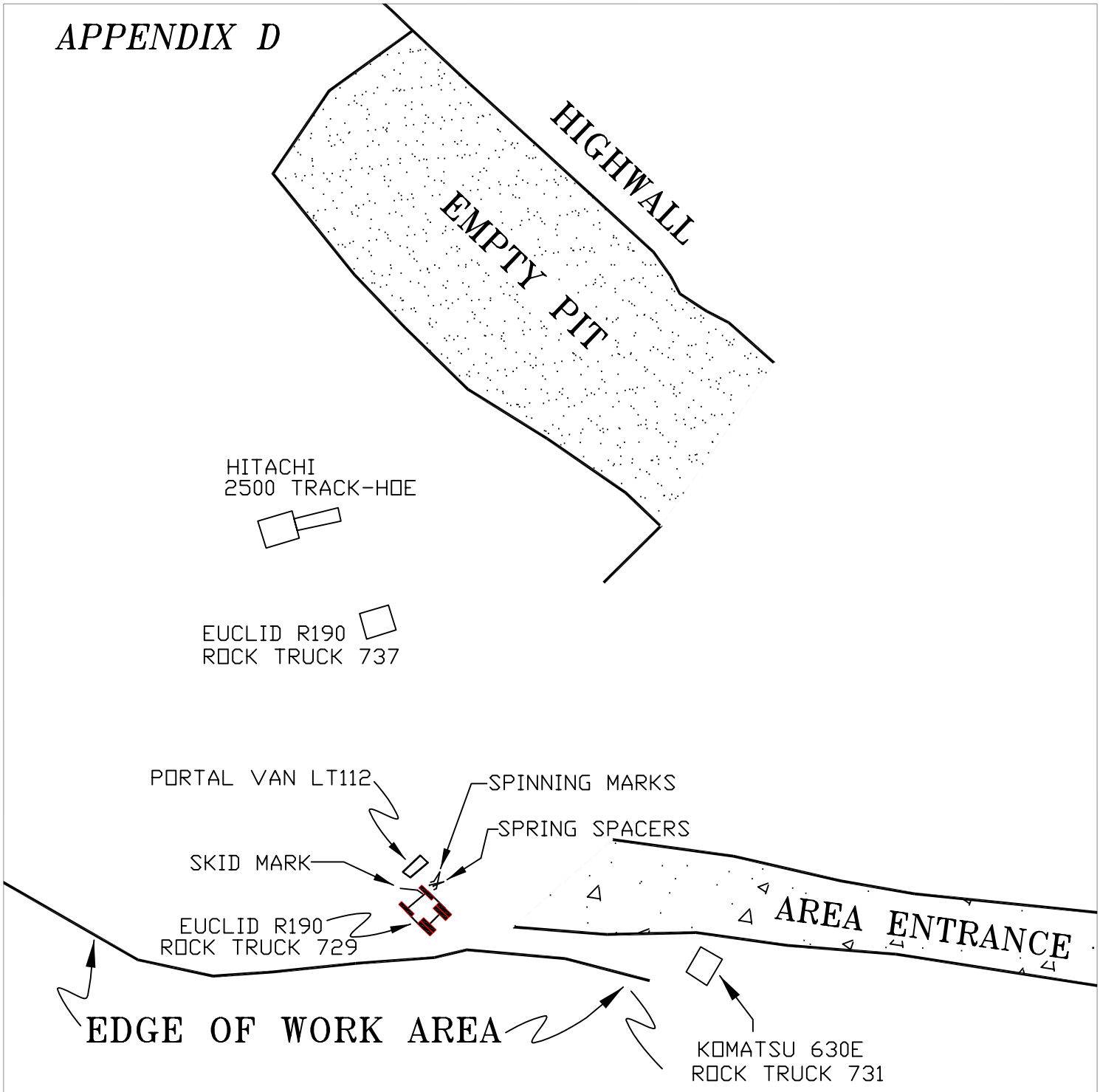
List of Persons Interviewed

Gordon S. Mills	Rock Truck Driver	Progress Coal
Edmond Dotson	Rock Truck Driver	Progress Coal
Jack Easter	Foreman, Day Shift	Progress Coal
Larry Sigmon	Rock Truck Driver	Progress Coal
William Waters	Maintenance Superintendent	Progress Coal
Matthew Adkins	Portal Van Driver	Progress Coal
Michael Engle	Foreman, Evening Shift	Progress Coal
Larry Peters	Rock Truck Driver	Progress Coal
Randy J. Toler	Rock Truck Driver	Progress Coal
John Fox	Drill Operator	Progress Coal
Samuel Tipton	Track-hoe Operator	Progress Coal
Charles Hager	Maintenance Technician	Progress Coal
Lawrence Fox	Dozer Operator	Progress Coal
Glen Akers	Dozer Operator	Progress Coal
Ricky Hunter	Production Supervisor	Progress Coal
H. Tyrone Coleman	Manager of Safety	Progress Coal
Bryan Petrosky	Safety Director	Progress Coal

APPENDIX C


1
S-1 TRAILER PARKING AREA
WAREHOUSE/ COAL HANDLING
2
PORTAL VAN DROPS TRUCK DRIVER OFF HERE
3
930 LOT
GLORY KNOB
5
ACCIDENT LOCATION: 2500 HOE PIT
3RD LEFT
See Appendix D
JAMES CREEK
ROCK TRUCK (DOTSON) STOPS AND LETS PORTAL VAN PASS
PORTAL VAN DROPS DOZER OPERATOR OFF HERE
4
Progress Coal
Twilight MTR Surface Mine
MSHA ID NO. 46-08645
Date: 09-17-03
0 400 800 1200 1600 ft.

APPENDIX D



NOTE: EQUIPMENT LOCATION AT TIME OF INVESTIGATION.

Progress Coal
Twilight MTR Surface Mine
Accident Location: 2500 Hoe Pit
MSHA ID NO. 46-08645
Date: 09-17-03

0 50 100 150 200 ft.