

**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
October 28, 2008
Wyodak Mine
Wyodak Resources Development Company
Gillette, Campbell County, Wyoming
ID No. 48-00083
Accident Investigators
Art C. Gore
Accident Investigator/Coal Mine Safety and Health Inspector**

**William L. Younkin
Coal Mine Safety and Health Inspector**

**Fred M. Sanchez
Education Field Services Training Specialist**

**Originating Office
Mine Safety and Health Administration
District 9
P.O. Box 25367, Denver, Colorado 80225
Allyn C. Davis, District Manager**

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PHOTO OF ACCIDENT SCENE

DRESSER HAULPAK - MODEL 685E



OVERVIEW

On Tuesday, October 28, 2008, at approximately 5:11 p.m., William Kempf, a 48 year old Production Technician 1, was fatally injured while standing on the operator's deck of an end-dump haul truck. Kempf was outside the operator's cab on the deck of the parked truck between the air receiver tank and the back of the cab, when another end-dump haul truck backed into the front of his truck. The impact pushed the cab backwards, pinning Kempf between the brake accumulator cabinet at the back of the cab and the air tank. Kempf sustained fatal crushing injuries to his pelvis and lower body.

The accident resulted from mine management's failure to have standardized traffic rules addressing the operation of haul trucks waiting in line during the loading process. This resulted in Kempf parking his truck directly behind, too close to, and in the blind spot of the other truck while waiting to be loaded. A contributing factor included failing to make certain all persons were in the clear before traveling in reverse.

GENERAL INFORMATION

The Wyodak Mine, owned and operated by Wyodak Resources Development Company (WRDC), a subsidiary of Black Hills Corporation, Rapid City, South Dakota, is a surface coal mine located approximately five miles east of Gillette, Campbell County, Wyoming. The principal officers for WRDC and the Wyodak Mine at the time of the accident were Jack Clary, Mine Superintendent; Lacie Schwend, Safety Coordinator; Kurt Triscovi, Engineering Superintendent; Nick Herman, Maintenance Superintendent; and Bill Jenkins, Production Superintendent.

The Wyodak Mine began operations in 1923. The current active mining area is referred to as the Clovis Pit. Mining activities involve the removal of topsoil using scrapers; truck and shovels for overburden removal; and front-end loaders for coal removal. Coal is moved to on site power plants using "in-pit" crushing and conveying systems, and is delivered to a rail loadout facility using belly dump haulers. Coal is mined from the Wyodak and Anderson seams, which average approximately 90 feet in thickness in this area. The mine produced 6,015,890 tons of coal in 2008 with an average of 122 employees. At the time of the accident there were 103 employees in the pit and 19 in the office.

Prior to the accident, the last Mine Safety and Health Administration (MSHA) regular inspection was completed on April 16, 2008. The non-fatal days lost (NFDL) incidence rate for the mine for the first three quarters of 2008 was 1.11. The National NFDL incidence rate for surface coal mines for the same period was 1.30.

DESCRIPTION OF ACCIDENT

On October 28, 2008, Kempf worked at the Clovis rail loadout facility for the first half of his day shift, which started at 6:30 a.m. For the second half of the shift, he was assigned to operate haul truck No. 212, a Dresser Haulpak model 685E, 190-ton, end-dump truck. The shift proceeded without incident until the accident occurred at approximately 5:11 p.m.

Just prior to the accident, haul truck Nos. 274, 275, and 212 were waiting in line to be loaded at No. 205 overburden shovel on bench No. 3 in the Clovis Pit (see Appendix C). Truck No. 274, operated by Cody Holbrook, was first in line. Truck No. 275, operated by Vicki Wieseler, was in the middle and Kempf's No. 212 truck was last in line. A trainee, Keith Garrigan, was in the cab with Wieseler. Truck Nos. 274 and 275 were Terex/Unit Rig, 240-ton, end-dump haul trucks.

Prior to truck No. 275 arriving at the shovel, shovel operator James Donahue called the operator of rubber tired dozer No. 192 for a clean-up at the shovel. Wieseler arrived as the dozer was getting ready to perform the clean-up and parked truck No. 275 offset behind truck No. 274 in order for Holbrook to see her truck. Truck No. 274 was inside the clean-up area, so Holbrook decided to back up to give the dozer operator more room. Holbrook called Wieseler on the radio to let her know he was going to back up and Wieseler acknowledged the call. Wieseler looked at truck No. 274 in front of her truck, thought that she was too close to it, and she also decided to back up. Wieseler looked in her mirrors twice and did not see truck No. 212 parked behind her. She only saw a fourth truck, No. 207, approaching the area. Following standard company procedures, she honked the horn three times to signal that she was going to back up, took the brake off, put the truck in forward and then reverse and proceeded to back up slowly. Wieseler felt her truck hit something and it stopped, so she pulled forward.

As Chris Tellez and a trainee approached in truck No. 207, Tellez saw truck No. 275 backing up and realized that it was going to hit truck No. 212. Tellez grabbed the radio and yelled twice for truck No. 275 to stop, but it collided with truck No. 212 before it could be stopped. Tellez called for a "Mayday" at 5:15 p.m. Wieseler heard the distress call and parked her truck after pulling forward. She got down, blocked her truck and went to see what had happened. Wieseler then saw truck No. 212 behind her truck with the cab pushed back and she climbed up on the truck to look for the driver. She found Kempf pinned behind the cab. Wieseler yelled to Tellez that Kempf was trapped and had Tellez call security and request an ambulance. Wieseler returned to Kempf to be with and comfort him during the rescue operation.

The mine's MERT (Mine Emergency Response Team) responded to assist Kempf. Mark Gray, a Production Technician, was the first MERT member to arrive at the scene and the first person to arrive after Wieseler. Gray shut off the truck's engine and went to Kempf to evaluate his condition. After seeing Kempf, Gray immediately yelled that they needed EMS support. Gray found Kempf conscious, awake, and alert, but he was

beginning to go into shock. Kempf complained of lower back and pelvic pain and gradually lost feeling in his legs. Gray did not attempt to rescue Kempf due to his crushing injuries.

Campbell County Fire Department and EMS personnel arrived in approximately 20 minutes and assumed control of the rescue operation. They asked that mine personnel get down from the truck to make room for them to work. Kempf remained conscious and was pinned at the waist with his arms and upper body free. The fire department and EMS personnel cut loose the cab enough to pull it away from Kempf. At approximately 6:20 p.m., Kempf was freed, placed on a backboard/basket and lowered to the ground in the bucket of a front-end loader. Kempf lost consciousness after being freed. Kempf was transported by ambulance to the Campbell County Memorial Hospital in Gillette, Wyoming. Arrangements were made to Life Flight Kempf to Casper, Wyoming, but Kempf died before this could be done. Time of death was 9:45 p.m.

INVESTIGATION OF THE ACCIDENT

The MSHA Call Center was notified of the accident by Tim Hall, production foreman, at approximately 5:21 p.m., October 28, 2008. The Call Center notified William Denning, Staff Assistant to the District Manager, of the accident at 5:37 p.m. William Younkin, Coal Mine Safety and Health Inspector at MSHA's Gillette, Wyoming field office, was contacted by Denning and dispatched to the mine. Younkin arrived at the mine at 6:30 p.m. and issued a Section 103(k) Order to ensure the safety of persons at the mine until an investigation could be conducted. Younkin conducted a preliminary investigation into the accident. A MSHA investigation team was assembled and assigned to investigate the accident. Art C. Gore, the MSHA lead accident investigator, arrived at the mine on October 29, 2008, and began the investigation (refer to Appendix A for a list of persons participating in the investigation). The accident scene was examined, measurements were taken, documents were obtained, and witness interviews were conducted. The investigation at the mine site concluded on November 6, 2008. MSHA conducted the accident investigation jointly with officials from the Wyoming State Mine Inspector's office.

DISCUSSION

Location of Accident

The accident occurred in the Clovis pit at the northwest corner of the No. 205 shovel overburden bench.

Haul Trucks

Kempf operated a Dresser Haulpak 685E, 190-ton, end-dump haul truck, Serial Number CF31516AFE43-D, Company Number 212. This vehicle was approximately 22 feet high and 39 feet long. It was 23 feet 1 inch wide. The vehicle that backed into Kempf's truck was a Terex/Unit Rig MT4400, 240-ton, end-dump haul truck, Serial Number MH334,

Company Number 275. This truck was approximately 24 feet high and 46 feet long. It was 24 feet 10 inches wide. Kempf's truck was estimated to have been parked approximately 30 feet behind and within the blind spot of truck No. 275. This distance was estimated as truck No. 275 was moved after the accident to facilitate the rescue operation. Both the operator and the trainee in truck No. 275 stated that they looked in the mirrors prior to backing up the truck and did not see truck No. 212 behind them.

Location of Kempf on Truck

After the accident, Kempf was found pinned behind the operator's cab of truck No. 212 between the brake accumulator cabinet and the air receiver tank. He reportedly had gone to that area to relieve himself. WRDC had provided portable toilets along the haul road for the employees to use. Management expected employees to use the portable toilets and not relieve themselves at/on equipment. After the accident, a written policy was adopted to strictly prohibit this practice.

Safe Work Procedures

The investigation revealed that it was a common practice at the Wyodak Mine for haul truck operators, when waiting in line, to park in a staggered or offset manner so that truck operators could see the truck directly behind them in their rearview mirror. Also, the rear truck operator was positioned to see the operator of the truck directly in front of them in the front truck's rearview mirror. This safe work procedure was not documented in any written company policy or manual, but was reportedly provided to truck operators in verbal communications during training and safety contact meetings. A safety meeting held on August 29, 2008, and attended by Kempf, indicates the topic of discussion was "Truck placement & spacing for clean-ups." Specific procedures discussed in this meeting were not recorded on the meeting sheet. Task training for haul truck operators at the Wyodak Mine covers: "visibility, familiarity, knowing vehicle blind spots," when traveling, hauling, loading, and dumping. Kempf wrote his initials on the WRDC training form that he received this training on August 24, 2008. Contrary to this training, Kempf parked truck No. 212 directly behind and in the blind spot of truck No. 275.

On October 30, 2008, following the accident, WRDC implemented a written policy for haul truck operators, "to reaffirm the standard operating procedure.... When you are behind a haul truck you park in a staggered pattern so that the driver in front of you can see you in his driver's side rear view mirror."

On December 1, 2008, WRDC submitted a Ground Control Plan Addendum to MSHA, which stated, "Wyodak Resources designs bench widths at a minimum of 150 feet. This width is adequate to accommodate shovel trailing cables and operate equipment in accordance with Wyodak Resources' guidelines outlined in the Standard Operating Procedures (SOP) entitled "Overburden Loading Area and Clean Up at the Shovel" and "WRDC Traffic Rules, Vehicles and Driving Standard." These documents, written and adopted after the accident, require haul trucks to park in a staggered pattern and establish a minimum separation distance of 75 feet between haul trucks parked in a line.

Weather/Visibility

On the day of the accident, the weather was clear and sunny with a temperature of 60 degrees Fahrenheit. Winds were less than 5 mph. It was still daylight when the accident occurred at 5:11 pm.

Training and Experience

William Kempf, age 48, had 3 years 8 months mining experience with 12 weeks and 1 day at the Wyodak Mine. Prior to working at the Wyodak Mine, Kempf completed newly employed inexperienced surface coal miner training as required by 30 CFR, § 48.25 on January 6, 2005, and again on July 29, 2006. His start date at WRDC was August 4, 2008, and he received experienced surface coal miner training according to 30 CFR, § 48.26 on August 11, 2008. He received annual refresher training as required by 30 CFR, § 48.28 on October 23, 2008, and completed new task training on the Dresser Haulpak 190-ton haul truck according to 30 CFR, §48.27 on August 24, 2008. Kempf received the 30 CFR, Part 48 training required by MSHA regulations. Kempf had approximately 2 months experience as a haul truck operator at the Wyodak Mine.

Communications

The haul trucks involved in the accident were equipped with two-way radios and the operators could communicate with each other. Prior to the accident, the operator of truck No. 274 radioed that he was going to backup to give the dozer operator more room to clean up around shovel No. 205. The operator of truck No. 275 radioed back that she heard this communication. This communication could have been heard by Kempf if he had been in the cab of truck No. 212. The operator of truck No. 275 should have radioed that she was going to travel in reverse, prior to backing up the truck. In addition, Kempf did not communicate with or notify the operator that he was parked directly behind truck No. 275.

ROOT CAUSE ANALYSIS

An analysis was conducted to identify the most basic causes of the accident that were correctable through reasonable management controls. The following root cause was identified:

1. Root Cause: Management had not posted standardized traffic rules addressing the operation of haul trucks waiting in line during the loading process in the pit.

Corrective Action: The mine operator implemented standardized traffic rules requiring haul truck operators to park in a staggered pattern when waiting in line and to leave a minimum clearance of 75 feet between parked trucks. In addition, traffic rules were implemented such that haul truck operators are required to make positive verbal radio contact with drivers or other equipment operators behind before beginning to back up. If no contact is made with the

driver or other equipment operator behind, then the haul truck operator will not back up. All crews were trained in the new traffic rules.

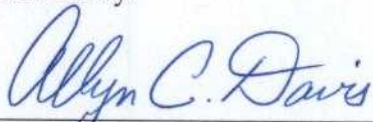
2. Root Cause: Management failed to ensure that the operator of haul truck No. 275 made certain that all persons were clear before backing up into haul truck No. 212, causing fatal injuries to the operator of truck No. 212.

Corrective Action: Management implemented traffic rules such that haul truck operators are required to make positive verbal radio contact with drivers or other equipment operators behind before beginning to back up. If no contact is made with the driver or other equipment operator behind, then the haul truck operator will not back up. All crews were trained in the new traffic rules.

CONCLUSION

The accident resulted from mine management's failure to have standardized traffic rules addressing the operation of haul trucks waiting in line during the loading process. This resulted in Kempf parking truck No. 212 directly behind, too close to, and in the blind spot of truck No. 275 while waiting to get loaded. A contributing factor included the operator of truck No. 275 failing to make certain all persons were in the clear before backing up.

Approved by:



Allyn C. Davis
District Manager

07-06-2009

Date

ENFORCEMENT ACTIONS

1. Order No. 6686832 was issued to Wyodak Resources Development Company under the provision of Section 103(k) of the Mine Act to ensure the safety of persons working at the accident site in the Clovis pit until an investigation could be conducted and the area determined to be safe before resuming operations.
2. Citation No. 8456060 was issued to Wyodak Resources Development Company under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR, §77.1600(b). The mine operator did not post or have standardized traffic rules and signals for in-pit loading operations. This violation contributed to the fatal accident at the mine in the Clovis pit when the operator of truck No. 275 backed into truck No. 212 after truck No. 212 was parked behind and in the blind spot of truck No. 275.
3. Citation No. 8456061 was issued to Wyodak Resources Development Company under the provisions of Section 104(a) of the Mine Act for a violation of 30 CFR, §77.1607(g). The mine operator failed to ensure that the operator of haul truck No. 275, a Terex/Unit Rig 240-ton truck, operating in the Clovis pit on October 28, 2008, made certain by signal or other means that all persons were clear before backing up the truck. As a result, truck No. 275 backed into parked truck No. 212 causing fatal injuries to the operator of truck No. 212.

APPENDIX A

List of Persons Participating in the Investigation

WYODAK RESOURCES DEVELOPMENT COMPANY OFFICIALS

Bill Jenkins	Production Superintendent
Craig Weber	Production Planner
Jack Clary	Mine Superintendent
Nick Herman	Maintenance Superintendent
Thomas Osborn	Production Foreman
Tim Hall	Production Foreman
Bryan R. McVay	Maintenance Planner
Kurt Triscori	Engineering Superintendent

WYODAK RESOURCES DEVELOPMENT COMPANY EMPLOYEES

Vicki Wieseler	Production Technician
Keith Garrigan	Production Technician
Chris Tellez	Production Technician
Richard Stanger	Production Technician
James Donahue	Production Technician
Cody Halbrook	Production Technician
Bryan Sieler	Production Technician
Mark Gray	Production Technician
Paul Anderson	Production Technician

BLACK HILLS CORPORATION OFFICIALS

Greg Hager	Vice President
Todd Sayler	Safety Manager
Jon Gunderman	Safety Specialist
Penny Schild	Human Resources Manager
Jonathan M. Oostra	Associate Counsel
Lacie Schwend	Safety Coordinator

DAVIS, GRAHAM AND STUBBS, LLP

Scot W. Anderson	Attorney at Law
Robert W. Micsak	Attorney at Law

STATE OF WYOMING DIVISION OF MINE INSPECTIONS AND SAFETY

Terry Adcock
Marci C. Young

State Inspector of Mines
Deputy Inspector

MINE SAFETY AND HEALTH ADMINISTRATION

William L. Younkin
Art C. Gore

Coal Mine Safety and Health Inspector
Accident Investigator/Coal Mine Safety and
Health Inspector

Fred M. Sanchez

Educational Field Services Training Specialist

APPENDIX B

PICTURE OF TRUCKS AT ACCIDENT SCENE

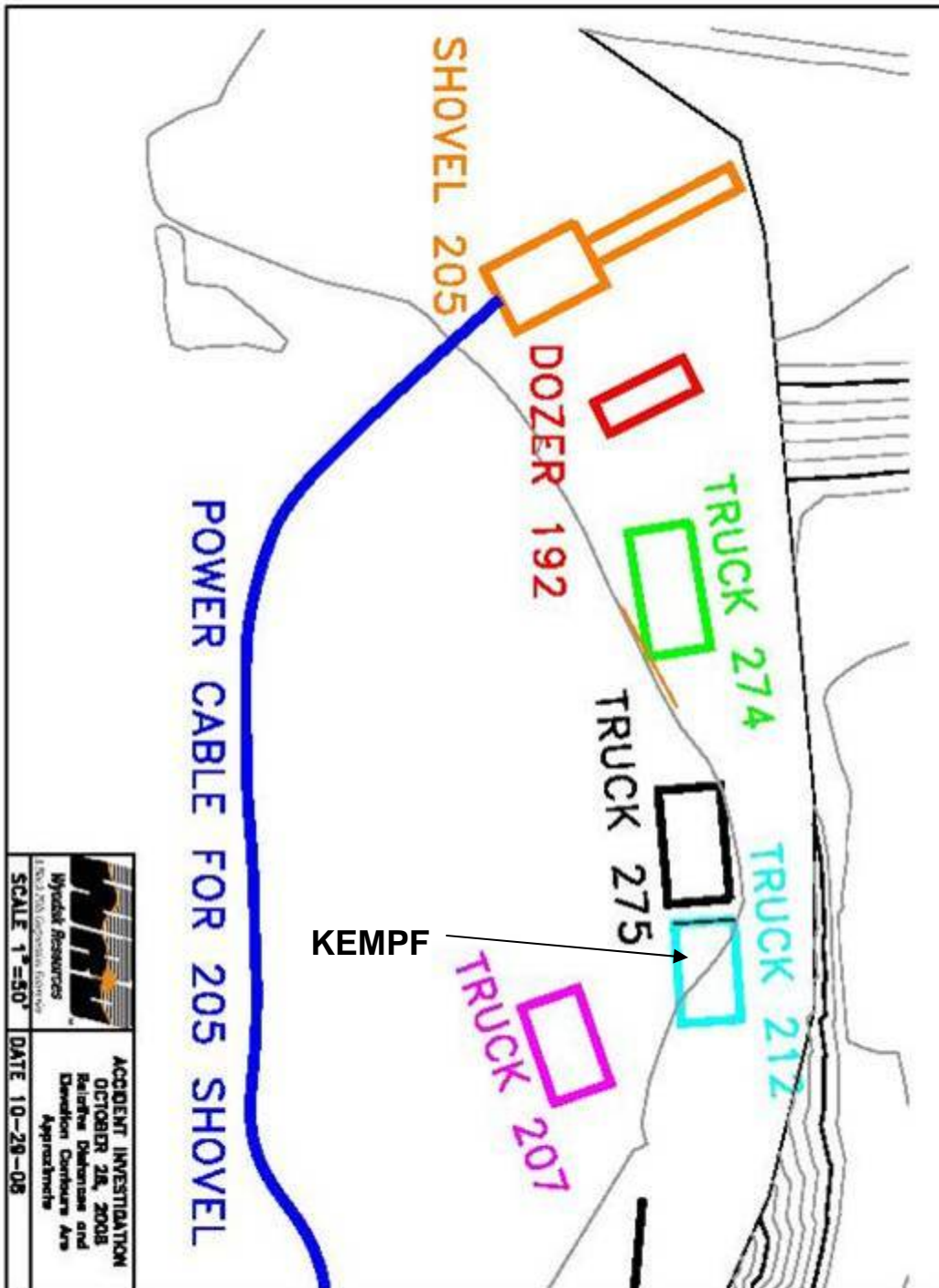
TEREX/UNIT RIG, MT 4400

DRESSER HAULPAK, 685E



APPENDIX C

SKETCH OF ACCIDENT SCENE



APPENDIX D

VICTIM INFORMATION

Accident Investigation Data - Victim Information

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



Event Number:

4	2	6	7	2	4	7
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Victim Information: 1																																					
1. Name of Injured/Ill Employee: <i>William G. Kempf</i>				2. Sex: <i>M</i>		3. Victim's Age: <i>48</i>		4. Degree of Injury: <i>01 Fatal</i>																													
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 10/28/2008 b. Time: 21:45</i>								6. Date and Time Started: <i>a. Date: 10/28/2008 b. Time: 6:30</i>																													
7. Regular Job Title: <i>176 Truck driver/Production technician 1</i>				8. Work Activity when Injured: <i>072 Operate haul truck</i>				9. Was this work activity part of regular job? <table style="width: 100%;"><tr><td style="width: 25%; text-align: center;">Yes</td><td style="width: 25%; text-align: center;"><input checked="" type="checkbox"/> X</td><td style="width: 25%; text-align: center;">No</td><td style="width: 25%;"></td></tr></table>						Yes	<input checked="" type="checkbox"/> X	No																					
Yes	<input checked="" type="checkbox"/> X	No																																			
10. Experience		Years	Weeks	Days	b. Regular		Years	Weeks	Days	c. This		Years	Weeks	Days	d. Total		Years	Weeks	Days																		
a. This					Job Title:					Mine:					Mining:																						
Work Activity:		<i>0</i>	<i>9</i>	<i>2</i>			<i>0</i>	<i>12</i>	<i>1</i>			<i>0</i>	<i>12</i>	<i>1</i>			<i>3</i>	<i>32</i>	<i>0</i>																		
11. What Directly Inflicted injury or illness? <i>076 Surface haul truck</i>								12. Nature of Injury or Illness: <i>170 Crushing</i>																													
13. Training Deficiencies: Hazard: <table style="width: 100%;"><tr><td style="width: 30%;"></td><td style="width: 30%; text-align: center;">New/Newly-Employed</td><td style="width: 30%; text-align: center;">Experienced Miner:</td><td style="width: 10%;"></td></tr></table> Annual: <table style="width: 100%;"><tr><td style="width: 30%;"></td><td style="width: 30%;"></td><td style="width: 30%;"></td><td style="width: 10%;"></td></tr></table> Task: <table style="width: 100%;"><tr><td style="width: 30%;"></td><td style="width: 30%;"></td><td style="width: 30%;"></td><td style="width: 10%;"></td></tr></table>															New/Newly-Employed	Experienced Miner:																					
	New/Newly-Employed	Experienced Miner:																																			
14. Company of Employment: (If different from production operator) <i>Operator</i>										Independent Contractor ID: (if applicable)																											
15. On-site Emergency Medical Treatment: Not Applicable: <table style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table> First-Aid: <table style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table> CPR: <table style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table> EMT: <table style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%; text-align: center;"><input checked="" type="checkbox"/> X</td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table> Medical Professional: <table style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table> None: <table style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table>																											<input checked="" type="checkbox"/> X										
	<input checked="" type="checkbox"/> X																																				
16. Part 50 Document Control Number: (form 7000-1) <i>220083120044</i>						17. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>																															