

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Underground Coal Mine

Fatal Fall of Face Accident
September 28, 2017

Bridger Underground Coal Mine
Bridger Coal Company
Point of Rocks, Sweetwater County, Wyoming
ID No. 48-01646

Accident Investigators

Art Gore
Electrical Specialist

Mark Schilke
Mining Engineer

James G. Vadnal
Geologist/Mining Engineer

Originating Office
Mine Safety and Health Administration
District 9
P.O. Box 25367, Denver, Colorado 80225
Richard A. Gates, District Manager

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OVERVIEW

At 2:20 p.m., on Thursday, September 28, 2017, Jaime Olivas, a 39-year-old longwall section operator with over 10 years mining experience received fatal injuries while installing roof support on the longwall recovery face. He was positioned in the panline, located eight to 10 feet from the face, attempting to untangle mesh from a metal roof mat, when a large slab of coal fell from the longwall face completely covering him.

The mine operator did not have policies in place to protect miners working in the panline. The fatal accident occurred because the mine operator did not adequately control the longwall face while miners were removing equipment.

GENERAL INFORMATION

The Bridger Underground Coal Mine is owned and operated by Bridger Coal Company. The current controller of the mine is MidAmerican Energy Holdings

Company; IDACORP. The mine is located northeast of Point of Rocks in Sweetwater County, Wyoming, approximately 35 miles east of Rock Springs, Wyoming. The mine was opened in 2004, mining in the D41 seam, which is 6.5 to 18 feet thick. The average mining height is 9.5 feet. The mine operates two production shifts and one maintenance shift seven days per week, employing 218 people. The mine produces an average of 6,592 tons of raw coal daily from three mechanized mining units using two continuous mining machines and one longwall. A belt conveyor system transports coal to the surface and then to the nearby Jim Bridger Electric Generation Plant.

The principal officers for the mine at the time of the accident were:

Jon Brown.....	General Manager
Keldon J. Mann.....	Mine Manager
James Poulson.....	Safety Superintendent
Daniel Bear	Manager Health & Safety
Bevan Wilson	Longwall Section Foreman

The last regular (E01) safety and health inspection started on July 6, 2017, and ended on September 27, 2017. The non-fatal days lost (NFDL) injury incidence rate for the mine in 2016 was 2.94, compared to a national NFDL rate of 3.37 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On September 28, 2017, as the day shift began at 7:00 a.m., J. Olivas was assigned by Bevan Wilson, Longwall Section Foreman, to operate the headgate panline bolting machine with Hebert Torres, Headgate Panline Bolter, as his helper. The 17th right longwall section, 011-0 MMU, had two Fletcher panline bolting machines operating inside the chain conveyor in preparation for shield recovery. The shift proceeded as normal, and when J. Olivas returned from lunch, Nick Martinez, Headgate Panline Bolter was bolting in the high spot around shield 53.

At the time of the accident, J. Olivas was working in the panline approximately six feet to the right of the bolting machine towards the headgate side. He was using a metal scaling bar to untangle the mesh from the mat that was being installed. Two bolts had been installed into the mat, and another roof bolt was being installed. A piece of coal fell from the face measuring approximately 2 feet by 2 feet, causing J. Olivas to begin backing away. While he was backing away, a large slab of coal fell from the face and completely covered him.

Martinez, Torres and Keith Sanders, Headgate Operator worked together to quickly uncover J. Olivas, who at the time was conscious and complaining of pain in his back, shoulder, and arm. Taylor Harris and Jose Portillo, Tailgate Panline Bolters, joined the rescue efforts and assisted in placing J. Olivas onto a stretcher. They then carried him to

the No. 2 entry roadway to meet the underground ambulance, which had been dispatched to the 17th right longwall at 2:30 p.m. At 2:45 p.m., the company highway ambulance was stationed at the mine portal. At 2:50 p.m. the underground ambulance left the section with J. Olivas and transported him to the surface. At approximately 3:03 p.m., J. Olivas was transferred to the company highway ambulance and at 3:12 p.m., the company highway ambulance left the mine property.

While the victim was being transported, an assessment was conducted by Jeremy Heaps, Emergency Medical Technician who checked for a pulse but did not detect one. He started cardiopulmonary resuscitation (CPR) and used an automated external defibrillator (AED), but no shock was advised. At 3:10 p.m., Heaps requested the presence of the Sweetwater County paramedics. Around 3:20 p.m., the company highway ambulance and the Sweetwater County advanced life support ambulance met at exit 122 on Interstate 80. The advanced life support medics took over his care. After approximately 40 minutes, the medics contacted Dr. Alicia Peterson, Emergency Room Physician, and she pronounced J. Olivas dead at 3:57 p.m.

INVESTIGATION OF THE ACCIDENT

At 4:10 p.m., Daniel Bear, Manager of Health & Safety for Bridger Underground Coal Mine, notified the Department of Labor (DOL) National Contact Center to report the accident. A noncontributory citation was issued for a violation of 30 CFR § 50.10 because the mine operator did not call MSHA immediately, at once, without delay, and within 15 minutes. At 4:22 p.m., the Contact Center notified Matthew Lemons, Roof Control Supervisor, in the MSHA District 9 Office of the accident. Lemons notified James Preece, Assistant District Manager.

Art Gore, MSHA Electrical Specialist and Lead Accident Investigator, was notified of the accident at 4:30 p.m., by Preece. Gore arrived at the mine at 8:04 p.m., and issued a 103(k) order to James Poulson, Safety Superintendent, to ensure the safety of all persons involved in the accident investigation. Preece and Mark Schilke, Roof Control Specialist/Mining Engineer, traveled to the mine and arrived shortly before midnight. In the early morning hours of September 29, 2017, the accident investigation team traveled underground to the accident site. They took photographs and relevant measurements at the accident scene.

On September 30, 2017, James Vadnal, Mining Engineer, Technical Support Roof Control Division, arrived to assist in investigating the geological conditions at the accident scene.

The accident investigation was conducted by MSHA in cooperation with Wyoming Department of Workforce Services Mines Inspection and Safety Inspectors, Bridger

Underground Coal Mine personnel, and the International Brotherhood of Boilermakers Union. Interviews were conducted on September 29, 2017 (see Appendix A).

On October 2, 2017, Fredrick Sanchez, MSHA Supervisory Training Specialist, arrived to assist in the investigation. Sanchez examined all of J. Olivas' training records and found that his training was in accordance with 30 CFR § Part 48.

DISCUSSION

Accident Scene and Location

The accident occurred between the longwall face and the panline at shield 53, near midface, on the 17th right longwall section. The longwall face was located at crosscut 22 on the headgate side of the longwall panel. Due to the thinning of the coal seam, the mine operator made a decision to stop mining and remove the equipment from this panel. Coal thicknesses at the final longwall location ranged from 14.5 feet to just over 17 feet. Bridger had been attempting to mine 10 feet of the coal from near the center of the seam, leaving approximately 1.5 to 2 feet of coal on the mine roof with the remainder of the seam forming a coal floor. Near the center of the longwall face, the coal left on the mine roof had not been adhering to the main shale roof above the face.

The average mining height was approximately 9.5 feet along the face, however, from shield 47 to shield 59, the face and roof had been falling and the shearer had left a brow (coal left attached to the mine roof extending out from the mined face) of about 24 inches. The longwall face was abnormally high in the area from shield 47 to shield 59 measuring over 13 feet high at shield 53, where the accident occurred (see Appendix B).

During the accident interviews, Harris and Torres, stated that big slabs of coal had fallen in the area prior to the accident. Arturo Duran, Panline Bolter, stated that a slab of coal had fallen out of the face on the preceding Monday. These slabs fell as the shearer was making the final two to three passes to prepare for the extraction of the longwall equipment. The maximum cutting height of the shearer was 11.5 feet and the roof had been falling out up to as high as 13 feet.

According to witnesses, at the time of the accident, J. Olivas was in the panline and was eight to 10 feet from the face when a piece of coal fell from the face measuring approximately 2 feet by 2 feet. J. Olivas began to back away when the large slab of coal fell and completely covered him. When investigators arrived at the accident scene, they discovered the pieces of coal that had fallen, including the one that covered J. Olivas, in the panline beside the bolting machine.

Face Conditions and Support

The roof of the longwall had been spot bolted. Mesh had been installed over the shields toward the longwall face and bolted with 12-foot cable bolts, eight-foot rebar bolts, and

metal roof mats. The longwall face had been glued in areas, but no face or rib bolting had taken place. The longwall face height was about 9.5 feet for most of the face, except for the area from shield 47 to shield 59 which was over 13 feet in places.

Rib/Face Control Plan

Bridger's approved roof control plan for the longwall recovery (extraction) area called for the installation of yellow synthetic fabric Huesker mesh (mesh). (See Appendix C) As per the plan, the mesh was to be installed over the longwall shields as the face approached the final position. It would drape over the top and back of the shields and keeps the collapsed roof (gob) behind the shields from falling into the face area as the shields are removed. The plan also required, in part, that at a minimum 12 feet, tension cable bolts be installed from the headgate to within 100 feet of the tailgate. Within 100 feet of the tailgate, the plan provided that tension cable bolts could be replaced with 96" fully grouted bolts. Metal beams with at least a four inch wide flange were to be installed from the shield tips toward the face. The mine was in compliance with the plan. The plan did not require face or rib bolting.

Examinations

The pre-shift examination was performed by Bevan Wilson, Longwall Section Foreman. Wilson completed the inspection at 2:00 p.m. and called out at 2:09 p.m. that no hazards were noted and air measurements and gas tests were normal.

Experience and Training

J. Olivas had over ten years of mining experience working in underground coal mines. He was hired at Bridger Underground Coal Mine in 2008 and began working on the longwall in November of 2014. J. Olivas received task training for the panline bolting machine on April 12, 2010, and also on November 26, 2016. He received annual refresher training for underground miners on August 16, 2017. J. Olivas' training was found to be current and in compliance with 30 CFR § Part 48.

ROOT CAUSE ANALYSIS

MSHA conducted an analysis to identify the most basic causes of the accident that were correctable through reasonable management controls. A root cause was identified that, if eliminated, would have either prevented the accident or mitigated its consequences.

Listed below is the root cause identified during the investigation and the operator's implemented corrective action to prevent a recurrence of this type of accident:

1. Root Cause: The mine operator did not have effective policies, programs, procedures, or controls in place to protect miners from a fall of roof or the longwall face while miners are positioned in the panline or between the panline and the longwall face.

Corrective Action: The mine operator submitted a roof control plan addendum to address safety measures in the area where the accident occurred. The approved plan required mesh to be placed on the face from shields 50 to 61 and secured with roof bolts. At no time could anyone be in the face conveyor. All roof and rib bolting were required to be performed from the panline bolting machines. Adequate support, including face bolting, was also required from shield 50 to the headgate. All future longwall recovery plans will require a site specific roof control plan and will incorporate longwall face support.

CONCLUSION

At 2:20 p.m., on Thursday, September 28, 2017, Jaime Olivas, a 39-year-old longwall section operator with over 10 years mining experience received fatal injuries while installing roof support on the longwall recovery face. He was positioned in the panline, located eight to ten feet from the face, attempting to untangle mesh from a metal roof mat, when a large slab of coal fell from the face, completely covering him.

The mine operator did not have policies in place to protect miners standing in the panline. The fatal accident occurred because the mine operator did not adequately control the longwall face while removing equipment.

Signed By:

Richard A. Gates
District Manager

Date

ENFORCEMENT ACTIONS

1. Section 103(k) Order No. 9026204, was issued on September 28, 2017, to Bridger Coal Company, Bridger Underground Coal Mine.

This mine has experienced a fatal accident in the 17th right longwall section, 011-0 MMU. This order is being issued, under Section 103(k) of the Federal Mine Safety and Health Act of 1977, to assure the safety of all persons at this operation. It prohibits all activity in the affected area of the section until MSHA has determined that it is safe to resume normal operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the section.

2. A 104(a) Citation No. 9026369 was issued to Bridger Coal Company, Bridger Underground Coal Mine for a violation of 30 CFR § 75.202(a).

The longwall face was not properly supported or controlled where miners were required to work and travel on the 17th right longwall section MMU 011-0. On September 28, 2017 a section of the longwall face fell onto a miner resulting in his death.

Appendix A
Persons Participating in the Investigation
(Persons interviewed are identified by a * next to their name)

Bridger Coal Company

Jon Brown.....General Manager
Keldon J. Mann..... Mine Manager
James Poulson..... Safety Superintendent
*Bevan Wilson Longwall Section Foreman
*Tomas Olivas..... Longwall Section Operator
*Arturo Duran Panline Bolter
*Keith Sanders Headgate Operator
*Taylor Harris Tailgate Panline Bolter
*Hebert Torres Headgate Panline Bolter
*Nick Martinez Headgate Panline Bolter
*Jose Portillo..... Tailgate Panline Bolter
*Damien Wood Mechanic

Wyoming Department of Workforce Services Mine Inspection and Safety Inspectors

Terry Adcock State Mine Inspector
Rob Mulinix Deputy Mine Inspector

International Brotherhood of Boilermakers

Roy Moyer..... Union President/Miners Representative

Sweetwater County Sheriff's Office

Todd S. Poppie Deputy

Mine Safety and Health Administration

James Preece.....Assistant District Manager Enforcement
Mark SchilkeRoof Control Specialist/Mining Engineer
Art Gore..... Electrical Specialist/ Accident Investigator
James Vadnal.....Mining Engineer/Geologist/Roof Control Division
Fredrick Sanchez.....Training Specialist

Appendix B
Longwall Face and Roof



The picture above shows the longwall face and roof in the area of the accident with mesh rolled up.

Appendix C
Longwall Face and Mesh



Looking towards the tailgate from shield 54 at panline bolting machine

Appendix D Victim Information

Accident Investigation Data - Victim Information

U.S. Department of Labor

Mine Safety and Health Administration



Event Number: 6 4 6 6 5 4 9

Victim Information: 1

1. Name of Injured/Ill Employee: <i>Jaime Olivas</i>		2. Sex <i>M</i>	3. Victim's Age <i>39</i>	4. Degree of Injury: <i>01 Fatal</i>	
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 09/28/2017 b. Time: 15:57</i>				6. Date and Time Started: <i>a. Date: 09/28/2017 b. Time: 7:00</i>	
7. Regular Job Title: <i>064 Fletcher Longwall Pan Bolter</i>		8. Work Activity when Injured: <i>098 In chain Conveyor assisting Pan Bolter</i>		9. Was this work activity part of regular job? <div style="text-align: right;">Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X</div>	
10. Experience a. This Work Activity: <i>0</i> Years <i>1</i> Weeks <i>0</i> Days		b. Regular Job Title: <i>2</i> Years <i>16</i> Weeks <i>1</i> Days		c. This Mine: <i>8</i> Years <i>41</i> Weeks <i>0</i> Days	
11. What Directly Inflicted Injury or Illness? <i>122 Longwall Coal Face Rollout</i>		12. Nature of Injury or Illness: <i>170 Covered by Debris</i>			
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) <i>Operator</i> 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 checked="" type="checkbox"/> X Medical Professional: <input type="checkbox"/> None: <input type="checkbox"/>					
16. Part 50 Document Control Number: (form 7000-1)		17. Union Affiliation of Victim: <i>2473</i>		<i>Int. B. of Boilermakers</i>	