

2019 Fatal Comparison Chart (based on preliminary report data, fatal alerts, &amp; final reports) Updated: 7/9/2019

<b>MNM Total</b>	<b>6</b>	<b>Fatal #'s</b>	<b>Coal Total</b>	<b>4</b>	<b>Fatal #'s</b>	<b>Total</b>
Underground (UG)	0		Underground (UG)	3	1, 2, 9	3
Surface & Sur of UG	6	3, 4, 6, 8, 10, 11	Surface & Sur of UG	1	5	7
Contractor	2	10, 11	Contractor	2	1, 2	4
Powered Haulage	3	8, 10, 11	Powered Haulage	1	2	4
Non-Powered Haulage			Non-Powered Haulage			
Machinery	2	3, 6	Machinery	2	1, 5	4
Roof, Rib, Highwall Fall			Roof, Rib, Highwall Fall	1	9	1
Electrical			Electrical			
Slip & Fall of Persons	1	4	Slip & Fall of Person	0		1
Fall & Sliding Materials			Fall & Sliding Materials			
Ignition/Exploding Gas			Ignition/Explosion/Fire			
Hoisting			Hoisting			
Inundation			Inundation			
Exploding Vessel			Exploding Vessel			
Explosive/Breaking Agent			Explosive/Breaking Agent			
Maintenance/Repair Involved			Maintenance/Repair Involved			
Examiner, Supervisor, Owner	1	6	Examiner, Supervisor, Owner	0		1
Other			Other			
<b>Age 0-19</b>			<b>Age 0-19</b>			
Age 20-29	1	10	Age 20-29			1
Age 30-39	3	3, 8, 11	Age 30-39	1	5	4
Age 40-49	1	4	Age 40-49	1	9	2
Age 50-59	1	6	Age 50-59	2	1, 2	3
Age 60+			Age 60+			
<b>Experience</b>			<b>Experience</b>			
Less than 1 year	1	3	Less than 1 year			1
1-9 years	3	4, 8, 10	1-9 years			3
10-19 years	2	7, 11	10-19	2	5, 9	4
20+	1	6	20+	2	1, 2	3
<b>Mine Site Experience</b>		10 – not reported yet	<b>Mine Site Experience</b>			
Less than 1 year	4	3, 4, 8, 11	Less than 1 year	3	1, 2, 9	7
1-9 years			1-9 years	1	5	1
10-19			10-19			
20+	1	6	20+	0		1
<b>Job/Task Experience</b>			<b>Job/Task Experience</b>			
0-7 days	1	3	0-7 days	1	1	2
Less than 1 year	2	3, 8	Less than 1 year	1	1	3
1-9 years	2	4, 10	1-9 years	2	5, 9	4
10-19	1	11	10-19	0		1
20+	1	6	20+	1	2	2
<b>Shift Time (occurred)</b>			<b>Shift Time</b>			
1 <sup>st</sup> Shift (7am-3pm)	3	3, 6, 10	1 <sup>st</sup> Shift (7am-3pm)	2	2, 5	5
2 <sup>nd</sup> Shift (3pm-11pm)	2	8, 11	2 <sup>nd</sup> Shift (3pm-11pm)	1	9	3
3 <sup>rd</sup> Shift (11pm-7am)	1	4	3 <sup>rd</sup> Shift (11pm-7am)	1	1	2
<b>Day of the Week:</b>			<b>Day of the Week:</b>			
Sunday			Sunday			0
Monday	3	6, 10, 11	Monday	1	2	4
Tuesday			Tuesday			0
Wednesday	1	3	Wednesday	1	9	2
Thursday	1	4	Thursday	1	5	2
Friday			Friday			0
Saturday	1	8	Saturday	1	1	2

**Focus on your safety goal with purpose!**

2019 - Month	MNM	Coal	Totals	Difference	Totals	2018 - Month	MNM	Coal
January	0	2	2	+1	1	January	1	0
February	0	0	0	-2	2	February	0	2
March	2	1	3	0	3	March	1	2
April	0	0	0	-1	1	April	1	0
May	2	1	3	+2	1	May	1	0
June	2	0	2	-1	3	June	2	1
July					1	July	1	0
August					1	August	1	0
September					2	September	0	2
October					6	October	5	1
November					2	November	2	0
December					4	December	0	4
<b>2019 Total:</b>	<b>6</b>	<b>4</b>	<b>10</b>	<b>-1</b>	<b>27</b>	<b>2018 Total:</b>	<b>15</b>	<b>12</b>

Product	Fatal #'s For 2019	2019 Total product	2018 Total product	2017 Total product
Alumina				0
Cement				2
Clay				
<b>Coal</b>	1-2, 5, 9	4	12	15
Copper	3	1	1	1
Diatomaceous Earth				1
Dimension Stone			1	
Gold Ore			2	2
Granite	6		1	1
Gypsum				
Kaolin				
Lead Ore			1	
Lime			1	
Limestone	4, 10	2	1	2
Magnesite				
Phosphate				
Potash				
Sand/Sand & Gravel	8, 11	2	6	3
Sandstone				
Shale				
Silver Ore				
Stone				1
Titanium				
Traprock			1	

State (2019)	Total	MNM	Coal	Fatal #
Georgia	1	1	0	6
Illinois	1	0	1	1
<b>Kentucky</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2, 9</b>
Nevada	0			
New Mexico	1	1	0	3
Oklahoma	1	1	0	11
Tennessee	1	1	0	10
<b>Texas</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>4, 8</b>
West Virginia	1	0	1	5

Part 48 = 5	Part 46 = 5
All Coal = 4 Metal: UG = 1 Metal: SUR = 0	Non Metal SUR# 4, 6, 8, 10, 11

**THINK SAFETY!**

Month	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	TOTAL	AVG
January	2	1	2	3	5	1	3	2	1	4	3	27	2.45
February	0	2	3	1	1	5	5	3	3	0	4	27	2.45
March	3	3	3	3	5	2	3	5	2	1	2	32	2.91
April	0	1	0	2	0	6	3	2	2	33	4	53	4.82
May	3	1	2	2	4	6	1	5	1	6	3	34	3.09
June	2	3	3	4	3	6	3	2	4	6	5	41	3.73
July		1	4	2	2	2	4	4	2	3	2	26	2.6
August		2	2	1	4	3	3	2	3	4	1	25	2.5
September		1	3	3	2	3	3	5	4	1	4	29	2.9
October		6	4	1	0	3	5	1	6	6	3	35	3.5
November		2	0	0	0	6	5	4	4	3	2	26	2.6
December		4	2	3	3	3	4	1	4	5	2	31	3.1
<b>Total:</b>	<b>10</b>	<b>27</b>	<b>28</b>	<b>25</b>	<b>29</b>	<b>46</b>	<b>42</b>	<b>36</b>	<b>36</b>	<b>72</b>	<b>35</b>	<b>386</b>	<b>3.05/mo</b>
										UBB			

Average over past 10 years (2009-2018) = 38 per year

Average over past 5 years (2014-2018) = 31 per year

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# 2019 – Combined Coal and MNM Fatal

## Fatal #1 – Machinery – UG Coal

## Illinois

On Saturday, January 5, 2019, at approximately 3:00 am, a 55-year-old miner with 28 years mining experience was performing outby laborer work when he received fatal injuries. He was pinned between a pneumatically powered air lock equipment door and the concrete rib barrier located near the shaft bottom. (Experience: 5 weeks at mine site and 1 day performing the activity)

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

### Best Practices:

- Design and maintain ventilation controls, including airlock doors to provide air separation and permit travel between or within air courses or entries.
- Ensure that airlock doors are designed and maintained to prevent simultaneous opening of both sets of doors.
- Ensure miners are trained in the proper use of automatic doors and procedures to follow in the event the doors malfunction.
- Provide means to override automatic airlock doors and allow manual operation in case of an emergency.
- Keep the path of automatic doors clear of miners and equipment.
- When changes in ventilation are made, test automatic doors to ensure they operate safely under the new conditions.
- Perform thorough examinations of airlock doors to assure safe operating conditions. When a hazardous condition is found, remove the doors from service until they are repaired.

*Use the following links to view additional information:*

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	Final Report
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# 2019 – Combined Coal and MNM Fatals

## Fatal #2 – Powered Haulage – UG Coal

## Kentucky

On Monday, January 14, 2019, a 56-year-old survey crew member with 30 years mining experience was fatally injured when he was struck by a shuttle car traveling to the coal feeder. At the time of the accident, Slone was taking measurements of the mining height as part of his surveying duties.

Cited Regulation: 75.512 (Safeguard Issued: 75.1403)

### Root Cause:

- The mine operator did not have effective policies, procedures, and controls to protect miners who are on foot from being contacted by moving mobile face equipment. The shuttle car operator's field of vision was greatly reduced due to the size/height of the shuttle car and the low mining height.
- The mine operator did not ensure that both headlights on the shuttle car were working properly to illuminate the direction of travel and warn miners traveling on foot. One headlight on the dump end of the shuttle car involved in the fatal accident was not operational.

### Best Practices:

- Ensure directional lights are on when equipment is being operated. Maintain all lights provided on mobile equipment in proper working condition at all times.
- Operate mobile equipment at safe speeds and sound audible warnings when visibility is obstructed, making turns, reversing direction, etc. Ensure sound levels of audible warnings are significantly higher than ambient noise.
- Before performing work in an active haulage travelway, communicate your position and intended movements to mobile equipment operators and park mobile equipment until work has been completed.
- Never assume mobile equipment operators can see you. Always wear reflective clothing and permissible strobe lights to ensure high visibility when traveling or working where mobile equipment is operating.
- Be aware of blind spots on mobile equipment when traveling in the same areas where mobile equipment operates.
- Place visible warning and barrier devices at all entrances to areas prior to performing work in active travelways of mobile equipment.

*Use the following links to view additional information:*

[Preliminary Report](#)

[Fatal Alert](#)

[Final Report](#)

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# 2019 – Combined Coal and MNM Fatal

## Fatal #3 – Machinery – SUR Copper

## New Mexico

On Wednesday, March 6, 2019, a 35-year-old mechanic (contractor) with 35 weeks mining experience (3 days experience at this mine site) was fatally injured when he was struck by a relief valve that was ejected from a 500-ton hydraulic jack. The hydraulic jack was being engaged to make contact with the frame of a P&H 4100A shovel when the relief valve was ejected.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

### Best Practices:

- Inspect, examine, maintain, and evaluate all materials and system components used in the installation, replacement, or repair of pressurized systems to ensure they are suitable for use and meet minimum manufacturer's specifications.
- Test systems at lower pressures to verify connections and flow rates prior to full pressure use.
- Position yourself in a safe location, away from any potential sources of failure, while pressurizing systems.
- Consult and follow the manufacturer's recommended safe work procedures.
- Establish, discuss, and enforce safe work procedures that include hazard analysis before beginning work. Identify and control all hazards associated with the work to be performed and use methods to properly protect persons.

*Use the following links to view additional information:*

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	Final Report
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## 2019 – Combined Coal and MNM Fatal

### Fatal #4 – Slip/Fall of Person – Surface Limestone Texas

On Thursday, March 7, 2019, 46-year-old contractor with 3 years experience was fatally injured after falling 12 feet from the top of a log washer. While the victim was tightening bolts on the log washer drive motor, his wrench slipped off the bolt head, causing him to lose balance and fall backwards. He fell through a 16-inch gap between two log washers, striking a handrail before landing on an electrical cable tray. He suffered internal injuries and died at the hospital.

Cited Regulation: 56.15005

Root Cause:

- The mine operator did not ensure that miners wore fall protection where there was a danger of falling.

Best Practices:

- Always use fall protection equipment when working at heights and near openings where there is a danger of falling.
- Always be aware of your surroundings and any hazards that may be present.
- Provide guarding and have properly designed handrails, guards, and covers securely in place at openings through which persons may fall.
- Train personnel in safe work procedures regarding the use of hand rails and fall protection equipment during maintenance and construction activities and ensure their use.
- Conduct workplace examinations in order to identify and correct hazards prior to performing work.

*Use the following links to view additional information:*

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	<a href="#">Final Report</a>
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# 2019 – Combined Coal and MNM Fatal

## Fatal #5 – Machinery – SUR Coal

## West Virginia

On Thursday, March 7, 2019, a 38-year-old miner with 10 years mining experience received fatal injuries when he was crushed between a metal support post on a highwall mining machine and a moving push beam.

Cited Regulation: 77.1504(b) and 48.27.

### Root Cause:

- The task training provided by the mine operator was not adequate because the training did not address areas to avoid in or near pinch areas that exist between moving parts as stated in the Superior Highwall Miners Safety, Operation, and Maintenance Manual.
- The mine operator did not identify the work location where the accident occurred as a pinch area that needed to be avoided.

### Best Practices:

- Identify red zone areas (and add to ground control plan) that exist when push beams are being installed or removed. Discuss safe work procedures for removing push beams.
- Train miners to recognize all potential hazardous conditions and red zone areas for the task they are performing or working around. Train (and enforce) miners to perform the task using the established safe job procedures.
- Identify and control all hazards and develop methods to protect miners.
- Determine the proper working position to avoid pinch points.
- Monitor personnel to ensure safe work procedures are followed.
- Always follow the equipment manufacturer's recommended maintenance procedures and discuss these procedures during training.

*Use the following links to view additional information:*

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	<a href="#">Final Report</a>
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## 2019 – Combined Coal and MNM Fatal

### MSHA Fatal #6 - Machinery – SUR Granite

Georgia

On Monday, May 13, 2019, a 59-year-old supervisor with 40 years experience was fatally injured when the stationary crane he was operating fell 85-feet into the quarry.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Ensure all safety devices are functional.
- Conduct a visual inspection of the equipment, load, and rigging prior to placing equipment in operation.
- Conduct a visual inspection of site conditions and potential hazards.

<i>Use the following links to view additional information:</i>		
<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	Final Report

### MSHA Fatal #7 – determined to not be chargeable

MSHA Fatal #7-2019 has been determined to not be chargeable to the mining industry. The Acting Chair of MSHA's Chargeability Review Committee reviewed the death certificate, autopsy report, and MSHA's accident investigation findings and determined that the miner died from natural causes.



## 2019 – Combined Coal and MNM Fatals

### MSHA Fatal #8 - Powered Haulage – SUR Sand & Gravel

Texas

On Saturday, May 18, 2019, a 34-year-old plant operator with 8 years mining experience was using a man lift basket to clear a cone crusher stoppage at a height of 28 feet. The miner was wearing a fall protection harness and a retractable lanyard, but was not secured/tied-off to the man lift basket. The miner was ejected from the man lift basket to the surface below.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Always stay connected/tied off. Always attach the lanyard of the approved fall protection device to the designated attachment point.
- Use boom functions instead of tram functions to position the platform close to obstacles.
- Ensure that persons are properly task trained regarding safe operating procedures before allowing them to operate mobile equipment.
- Do not place yourself in a position that will expose you to hazards.
- Ensure that access gates or openings are closed.

*Use the following links to view additional information:*

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	Final Report
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# 2019 – Combined Coal and MNM Fatal

## MSHA Fatal #9 – Fall of Rib – UG Coal

## Kentucky

Preliminary: On Wednesday, May 22, 2019, a 48-year-old continuous mining machine operator with 12 years experience was severely injured when a section of coal/rock rib, measuring 48” to 54”-long, 24”-wide, and 28”-thick, fell and pinned him to the mine floor. At the time of the accident, the victim was in the process of taking the second cut of a crosscut and was moving the mining machine cable that was adjacent to the coal/rock rib. The victim was hospitalized and due to complications associated with his injuries, passed away 8 days later.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

### Best Practices:

- Install rib bolts with adequate surface area coverage, during the mining cycle, and in a consistent pattern for the best protection against rib falls.
- Follow the requirements in the approved roof control plan, and remember it contains minimum safety requirements. Install additional support when rib fractures or other abnormalities are detected. Revise the plan if conditions change and cause the support system to no longer be adequate.
- Be aware of potential hazards when working or traveling near mine ribs, especially when geologic conditions (such as thick in-seam rock partings) could cause rib hazards. Take additional safety precautions while working in these conditions. Correct all hazardous conditions before allowing miners to work or travel in these areas.
- Perform complete and thorough examinations of pillar corners, particularly where the angle formed between an entry and a crosscut is less than 90 degrees.
- Adequately support loose ribs or scale loose rib material from a safe location using a bar of suitable length and design.
- Task train all miners to conduct thorough examinations of the roof, face, and ribs where persons will be working or traveling and to correct all hazardous conditions before miners work or travel in such areas. Continuously watch for changing conditions and conduct more frequent examinations when abnormal conditions are present.

*Use the following links to view additional information:*

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	Final Report
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## 2019 – Combined Coal and MNM Fatal

### **MSHA Fatal #10 - Powered Haulage – SUR Limestone Tennessee**

Preliminary: On Monday, June 10, 2019, a 22-year-old contractor with 3 years of experience, was fatally injured when he was pinned between a front-end loader and a concrete block. The victim was working in a conduit trench, preparing to install a junction box. The front-end loader, that was being used to back fill the trench, over travelled the edge and toppled into the trench.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Train and monitor persons on safe work positioning.
- Establish and discuss safe work procedures. Identify and eliminate or control all hazards associated with the task being performed.
- Keep mobile equipment a safe distance from the edge of unstable ground, open excavations, and steep embankments.
- Operating speeds should be consistent with conditions of roadways, grades, and the type of equipment used.
- Ensure equipment operators are familiar with their working environment. Front-end loader operators must ensure personnel are not near the machine when in operation.

*Use the following links to view additional information:*

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	Final Report
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# 2019 – Combined Coal and MNM Fatal

## MSHA Fatal #11 - Powered Haulage – SUR Sand

Oklahoma

On Monday, June 24, 2019, a 34-year-old contractor with 10 years experience, received fatal injuries when he fell beneath the wheels of a tractor-trailer. Miners were using a bulldozer to pull the tractor-trailer, which had become stuck in the sand. As the tractor-trailer began to be pulled, the victim was seen walking toward the side of the truck. The victim died at the scene from crushing injuries after being run over by the truck wheels.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Do not allow people to ride in any area of a vehicle that is not equipped with a seat belt.
- When approaching large mobile equipment, do not proceed until you communicate and verify with the equipment operator your planned movement and location.
- Stay in the line of sight with mobile equipment operators. Never assume the equipment operator sees you.
- Ensure, by signal or other means, that all persons are clear before moving equipment.

Use the following links to view additional information:

<a href="#">Preliminary Report</a>	<a href="#">Fatal Alert</a>	Final Report
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MSHA investigates all deaths on mine property; however, some deaths are unrelated to mining activity and are not counted in the statistics MSHA uses to assess the safety performance of the mining industry. These deaths are termed "[non-chargeable](#)" and include homicides, suicides, deaths due to natural causes, and deaths involving trespassers.

MSHA uses a formal Fatality Review Committee to determine whether a questionable death is chargeable. There are Fourteen (14) **2019 combined (Coal and MNM) mining accidents that are pending chargeability determination.**

**Coal Fatal Data (1900 – 2018)** – This chart shows the number of coal miners working and the number of fatalities for each year.

**MNM Fatal Data (1900 – 2018)** – This chart shows the number of MNM miners working and the number of fatalities for each year.

**Focus on your safety goal with purpose!**