

2019 Fatal Comparison Chart (based on preliminary report data, fatal alerts, & final reports) Updated: 5/22/2019

| MNM Total | 5 | Fatal #'s | Coal Total | 3 | Fatal #'s | Total |
|----------------------------------|----------|------------------|----------------------------------|----------|------------------|--------------|
| Underground (UG) | 0 | | Underground (UG) | 2 | 1, 2 | 2 |
| Surface & Sur of UG | 5 | 3, 4, 6, 7, 8 | Surface & Sur of UG | 1 | 5 | 6 |
| Contractor | 1 | 7 | Contractor | 2 | 1, 2 | 3 |
| Powered Haulage | 2 | 7, 8 | Powered Haulage | 1 | 2 | 3 |
| Non-Powered Haulage | | | Non-Powered Haulage | | | |
| Machinery | 2 | 3, 6 | Machinery | 2 | 1, 5 | 4 |
| Roof, Rib, Highwall Fall | | | Roof, Rib, Highwall Fall | | | |
| 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 | | | |
| Age 0-19 | | | Age 0-19 | | | |
| Age 20-29 | | | Age 20-29 | | | |
| Age 30-39 | 1 | 3 | Age 30-39 | 1 | 5 | 2 |
| Age 40-49 | 1 | 4 | Age 40-49 | 0 | | 1 |
| Age 50-59 | 2 | 6, 7 | Age 50-59 | 2 | 1, 2 | 4 |
| Age 60+ | | | Age 60+ | | | |
| Experience | | | Experience | | | |
| Less than 1 year | 1 | 3 | Less than 1 year | | | 1 |
| 1-9 years | 1 | 4 | 1-9 years | | | 1 |
| 10-19 years | 1 | 7 | 10-19 | 1 | 5 | 2 |
| 20+ | 1 | 6 | 20+ | 2 | 1, 2 | 3 |
| Mine Site Experience | | | Mine Site Experience | | | |
| Less than 1 year | 3 | 3, 4, 7 | Less than 1 year | 2 | 1, 2 | 5 |
| 1-9 years | | | 1-9 years | 1 | 5 | 1 |
| 10-19 | | | 10-19 | | | |
| 20+ | 1 | 6 | 20+ | 0 | | 1 |
| Job/Task Experience | | | Job/Task Experience | | | |
| 0-7 days | 1 | 3 | 0-7 days | 1 | 1 | 2 |
| Less than 1 year | | | Less than 1 year | | | |
| 1-9 years | 1 | 4 | 1-9 years | 1 | 5 | 2 |
| 10-19 | 1 | 7 | 10-19 | 0 | | 1 |
| 20+ | 1 | 6 | 20+ | 1 | 2 | 2 |
| Shift Time (occurred) | | | Shift Time | | | |
| 1 st Shift (7am-3pm) | 3 | 3, 6, 7 | 1 st Shift (7am-3pm) | 2 | 2, 5 | 5 |
| 2 nd Shift (3pm-11pm) | | | 2 nd Shift (3pm-11pm) | | | |
| 3 rd Shift (11pm-7am) | 1 | 4 | 3 rd Shift (11pm-7am) | 1 | 1 | 2 |
| Day of the Week: | | | Day of the Week: | | | |
| Sunday | | | Sunday | | | |
| Monday | 2 | 6, 7 | Monday | 1 | 2 | 3 |
| Tuesday | | | Tuesday | | | |
| Wednesday | 1 | 3 | Wednesday | 0 | | 1 |
| Thursday | 1 | 4 | Thursday | 1 | 5 | 2 |
| Friday | | | Friday | | | |
| 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 | 3 | 0 | 3 | +2 | 1 | May | 1 | 0 |
| June | | | | | 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 |
| 2019 Total: | 5 | 3 | 8 | 0 | 27 | 2018 Total: | 15 | 12 |

| Product | Fatal #'s For 2019 | 2019 Total product | 2018 Total product | 2017 Total product |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| Alumina | | | | 0 |
| Cement | | | | 2 |
| Clay | | | | |
| Coal | 1-2, 5 | 3 | 12 | 15 |
| Copper | 3 | 1 | 1 | 1 |
| Diatomaceous Earth | | | | 1 |
| Dimension Stone | | | 1 | |
| Gold Ore | 7 | 1 | 2 | 2 |
| Granite | 6 | | 1 | 1 |
| Gypsum | | | | |
| Kaolin | | | | |
| Lead Ore | | | 1 | |
| Lime | | | 1 | |
| Limestone | 4 | 1 | 1 | 2 |
| Magnesite | | | | |
| Phosphate | | | | |
| Potash | | | | |
| Sand & Gravel | 8 | 1 | 6 | 3 |
| Sandstone | | | | |
| Shale | | | | |
| Silver Ore | | | | |
| Stone | | | | 1 |
| Titanium | | | | |
| Traprock | | | 1 | |

| State (2019) | Total | MNM | Coal | Fatal # |
|---------------|----------|----------|----------|-------------|
| Alabama | | | | |
| Georgia | 1 | 1 | 0 | 6 |
| Illinois | 1 | 0 | 1 | 1 |
| Indiana | | | | |
| Iowa | | | | |
| Kentucky | 1 | 0 | 1 | 2 |
| Michigan | | | | |
| Nevada | 1 | 1 | 0 | 7 |
| New Mexico | 1 | 1 | 0 | 3 |
| New York | | | | |
| Pennsylvania | | | | |
| Texas | 2 | 2 | 0 | 4, 8 |
| Virginia | | | | |
| Washington | | | | |
| West Virginia | 1 | 0 | 1 | 5 |

| Part 48 = 4 | Part 46 = 4 |
|---|---------------------------|
| All Coal = 3 Metal: UG = 1 Metal: SUR = 0 | Non Metal SUR# 4, 6, 7, 8 |

| 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 | 31 | 3.1 |
| June | | 3 | 3 | 4 | 3 | 6 | 3 | 2 | 4 | 6 | 5 | 39 | 3.9 |
| 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 |
| Total: | 8 | 27 | 28 | 25 | 29 | 46 | 42 | 36 | 36 | 72 | 35 | 384 | 3.07/mo |
| | | | | | | | | | | 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:

| | | |
|------------------------------------|-----------------------------|--------------|
| Preliminary Report | Fatal Alert | Final Report |
|------------------------------------|-----------------------------|--------------|

2019 – Combined Coal and MNM Fatal

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 Fatals

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 and discuss 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:

| | | |
|------------------------------------|-----------------------------|--------------|
| Preliminary Report | Fatal Alert | Final Report |
|------------------------------------|-----------------------------|--------------|

2019 – Combined Coal and MNM Fatal

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

On Thursday, March 7, 2019, 46-year-contractor with 3 years experience was fatally injured when he lost his balance and fell backwards through a narrow gap between two log washers and landed on a cable tray approximately 12 feet below. The victim was changing drive belts on a log washer motor when his wrench slipped off of a bolt he was tightening, causing the loss of balance.

Cited Regulation: The Final Report is not currently available.

Root Cause: The Final Report is not currently available.

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.
- 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 handrails 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:

| | | |
|------------------------------------|-----------------------------|--------------|
| Preliminary Report | Fatal Alert | Final Report |
|------------------------------------|-----------------------------|--------------|

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 of mining experience received fatal injuries while he was working on the pad of a highwall mining machine (HWM). The miner was contacted in a pinch point between a post and a section of the HWM (i.e. push beam) that was being removed as part of the normal mining cycle.

Cited Regulation: Final Report is not currently available.

Root Cause: Final Report is not currently available.

Best Practices:

- Establish and discuss safe work procedures for removing push beams.
- 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.
- Train miners to recognize potential hazardous conditions and understand safe job procedures before beginning work.

Use the following links to view additional information:

| | | |
|------------------------------------|-----------------------------|--------------|
| Preliminary Report | Fatal Alert | Final Report |
|------------------------------------|-----------------------------|--------------|

2019 – Combined Coal and MNM Fatal

MSHA Fatal #6 - Machinery – SUR Granite

Georgia

Preliminary: On Monday, May 13, 2019, a 59-year-old crane operator with 40 years mining experience was operating a Lorain MC 790 crane lifting an approximately 15-ton block of granite from the pit. The boom of the crane lowered causing the crane to tip over and fall 85 feet into the pit.

| Use the following links to view additional information: | | |
|---|-------------|--------------|
| Preliminary Report | Fatal Alert | Final Report |

MSHA Fatal #7 - Powered Haulage – SUR Gold

Nevada

Preliminary: On Monday, May 13, 2019, a 57-year-old truck driver was driving a Caterpillar 777D haul truck was ascending the Cabin Pit Haul Road. The truck slowed and stopped and rolled backwards, over 300 feet, ran up a hill causing it to roll over once and coming to rest upright on its tires.

| Use the following links to view additional information: | | |
|---|-------------|--------------|
| Preliminary Report | Fatal Alert | Final Report |

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

Texas

Preliminary: On Saturday, May 18, 2019, ...

| Use the following links to view additional information: | | |
|---|-------------|--------------|
| Preliminary Report | Fatal Alert | Final Report |

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2019 – Combined Coal and MNM Fatal

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 thirteen (13) ***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.