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**July 2016**  
**Contractor Safety Meeting**

06/12/2016

# Weekly Safety Share – Open Hole



- What are the fatal risks for an open hole condition?
- How can we mitigate the hazards?



# Overview

- TRIR
- PFE
- MSHA Citations

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**TRIR**

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**FREEPORT-McMoRAN**



## Safety Performance

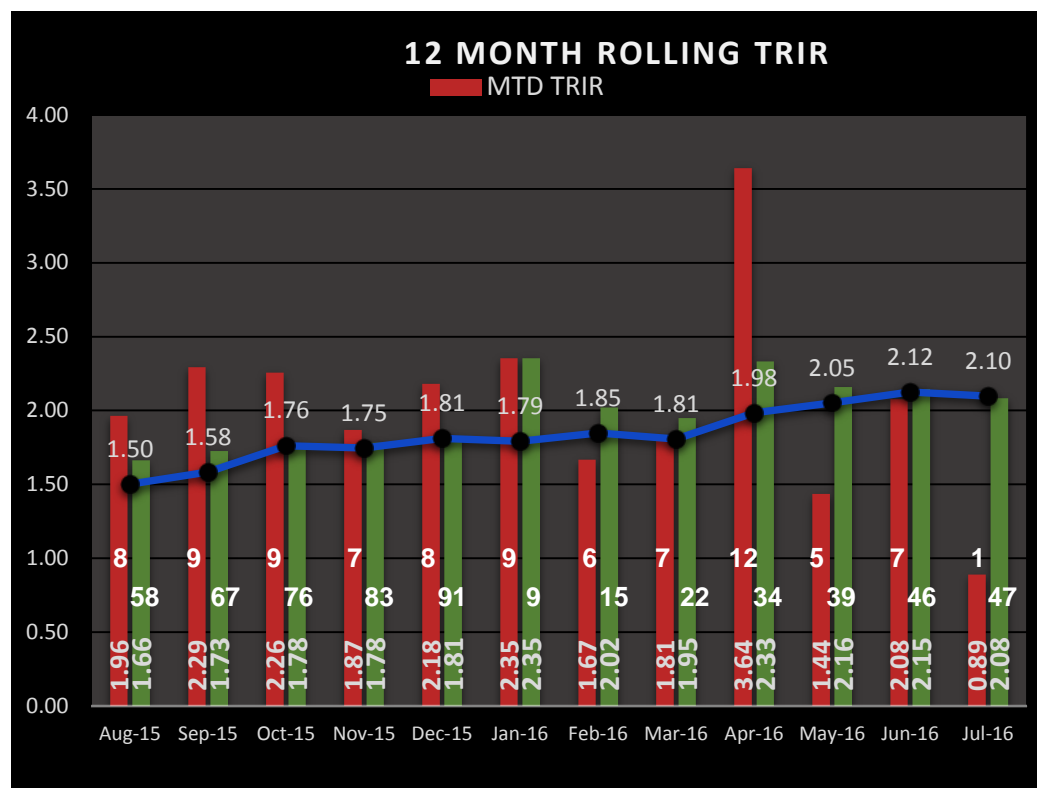
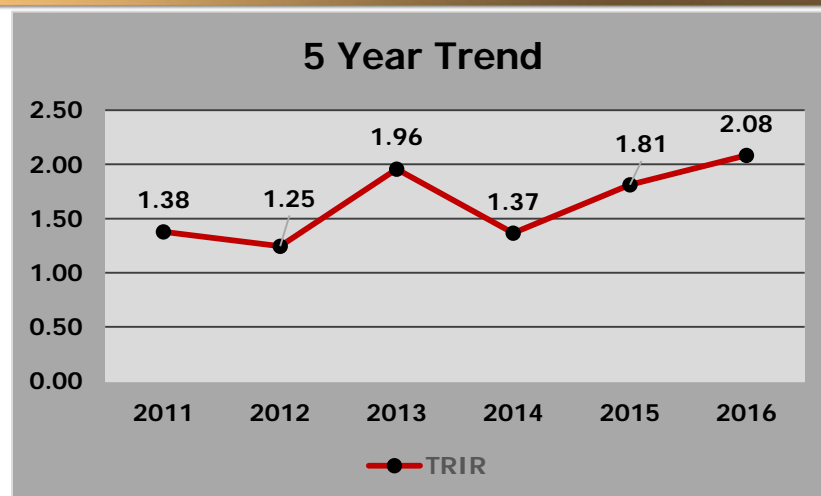
| Day of<br>the Year | Employees working Safely<br>(Reportable Injuries Only) |      |      | REPORTABLE INJURY RATE |      |      |        | LTIR |      |        | PROPERTY DAMAGE |       |        | MTD HEHI | YTD HEHI | YTD HEHI<br>Rate | HEHI Target | DAYS W/O<br>LTA | Hrs W/O LTA | Days W/O<br>Rec. | Hrs W/O Rec. |
|--------------------|--|------|------|------------------------|------|------|--------|------|------|--------|-----------------|-------|--------|----------|----------|------------------|-------------|-----------------|-------------|------------------|--------------|
|                    | TOTAL  | MTD  | YTD  | MTD                    | YTD  | QTD  | Target | MTD  | YTD  | Target | MTD             | YTD   | Target |          |          |                  |             |                 |             |                  |              |
| 192                |  |      |      |                        |      |      |        |      |      |        |                 |       |        |          |          |                  |             |                 |             |                  |              |
| Number             | 3104   | 3101 | 3014 | 1                      | 47   | 1    | 1.70   | 0    | 11   | 0.45   | 20              | 310   | 11.70  | 1        | 16       | 0.71             | 0.54        | 21              | 466367      | 6                | 139264       |
| Rate               |  |      |      | 0.89                   | 2.08 | 0.89 |        | 0.00 | 0.49 |        | 17.81           | 13.74 |        |          |          |                  |             |                 |             |                  |              |

7/11/2016



# Safety Dashboard 7/10/2016

| TRIR BREAKDOWN                       | MTD REP  | MTD TRIR               | YTD REP   | YTD TRIR                | 2nd QTD REP | 2nd QTD TRIR           |
|--------------------------------------|----------|------------------------|-----------|-------------------------|-------------|------------------------|
| FMMO                                 | 1        | 1.09<br>182744         | 40        | 2.27<br>3530865         | 1           | 1.09<br>182744         |
| CONTRACTORS                          | 0        | 0.00<br>41876          | 7         | 1.43<br>980383          | 0           | 0.00<br>41876          |
| <b>CURRENT TOTAL<br/>MORENCI ALL</b> | <b>1</b> | <b>0.89<br/>224619</b> | <b>47</b> | <b>2.08<br/>4511248</b> | <b>1</b>    | <b>0.89<br/>224619</b> |

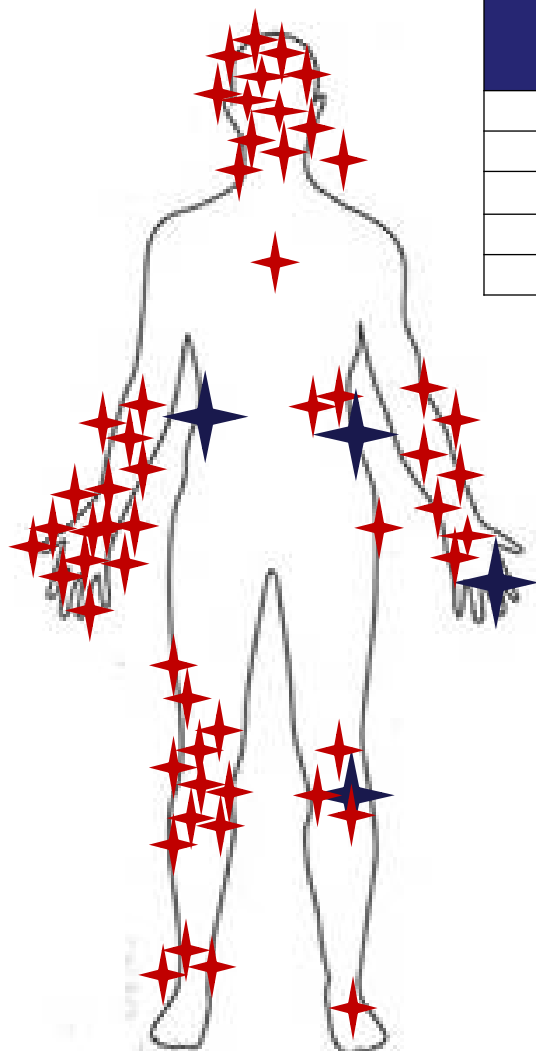




| Incident Date | Incident Type   | Organization/ Division        | Short Description  |
|---------------|-----------------|-------------------------------|--|
| 7/1/2016      | First Aid       | Contractor General Contractor | The #50 Locomotive derailed and struck a Western Express Truck.                                      |
| 7/4/2016      | Restricted Duty | Mine Frag-Loading/ Support    | Employee was walking towards his truck and felt a pop in his knee.                                   |
| 7/1/2016      | First Aid       | Processing Hydromet           | On 7/1/2016 an employee slipped and fell. On 7/4/2016, the employee reported pain in his lower back. |
| 7/10/2016     | First Aid       | Processing Crush & Convey     | An employee received a minor shock while adjusting the cable and pothead on the RP8 Ultra portable.  |





# Injuries – Top 5



 = Last week's injuries  
 = Year to date injuries.

| Nature of Injury                    | Total No. of Injuries | First Aid | Medical Treatment | Restricted Duty | Lost Time |
|-------------------------------------|-----------------------|-----------|-------------------|-----------------|-----------|
| Sprains & Strains                   | 52                    | 32        | 0                 | 16              | 4         |
| Bruise & Contusion                  | 18                    | 15        | 1                 | 1               | 1         |
| Irritation/ Burns (Chemical & Heat) | 18                    | 6         | 9                 | 1               | 2         |
| Cut/ Laceration/ Abrasion           | 16                    | 12        | 2                 | 2               | 0         |
| Amputation/ Fracture / Crack/ Chip  | 6                     | 0         | 3                 | 1               | 2         |

| Part of Body by Classification of Injury | Total No. of Injuries | First Aid | Medical Treatment | Restricted Duty | Lost Time |
|--|-----------------------|-----------|-------------------|-----------------|-----------|
| Hand/ Finger/ Wrist                      | 33                    | 18        | 8                 | 3               | 4         |
| Leg/ Knee/ Hip                           | 25                    | 14        | 0                 | 8               | 3         |
| Back/ Neck                               | 21                    | 16        | 0                 | 4               | 1         |
| Arm & Shoulder                           | 19                    | 10        | 2                 | 6               | 1         |
| Head/Face/ Eye/ Mouth                    | 14                    | 7         | 5                 | 0               | 2         |



# The road to success must be paved with optimism!

| <i><b>Division</b></i>        | <i><b>Date of Last Rep. Injury (FMMO)</b></i> | <i><b># of Days w/o Rep. Injury (FMMO)</b></i> | <i><b>Date of Last Rep. Injury (Contractors)</b></i> | <i><b># of Days w/o Rep. Injury (Contractors)</b></i> | <i><b>Date of Last HEHI Event</b></i> | <i><b># of Days w/o a HEHI Event</b></i> |
|-------------------------------|---|--|--|---|---------------------------------------|--|
| MAINTENANCE SERVICES          | 6/15/2016                                     | 25   | 9/14/15  | 300   | 7/1/2016                              | 9  |
| HYDROMET & CLP                | 6/11/2016                                     | 29   | 3/27/15  | 471   | 6/10/2015                             | 384                                      |
| LEACHING                      | 11/17/2015                                    | 236  | 3/17/16  | 115   | 2/25/2015                             | 440                                      |
| MORENCI CONCENTRATOR          | 6/17/2016                                     | 23   | 8/25/15  | 320   | 6/17/2016                             | 23                                       |
| METCALF CONCENTRATOR          | 6/11/2016                                     | 29   | 8/8/15   | 337   | 6/12/2016                             | 28                                       |
| CRUSH & CONVEY                | 5/31/2016                                     | 40   | 5/18/16  | 53  | 5/18/2016                             | 53                                       |
| MINE MAINTENANCE              | 4/5/2016                                      | 96   | 4/18/16  | 83  | 3/19/2016                             | 113                                      |
| FRAGMENTATION/LOADING/SUPPORT | 7/4/2016                                      | 6  | 4/19/12  | 1550  | 5/6/2016                              | 65                                       |
| HAULAGE                       | 6/19/2016                                     | 21   | 8/1/2008   | 3112  | 1/24/2016                             | 168                                      |
| RESOURCE MANAGEMENT           | 6/1/2016                                      | 39   | 2/17/16  | 144   | 1/5/2016                              | 187                                      |
| ADMINISTRATION                | 2/10/2015                                     | 534  | 9/15/15  | 299   | 1/1/2014                              | 922                                      |
| MERCANTILE                    | 5/31/2016                                     | 40   | 3/3/15   | 495   | 1/1/2014                              | 922                                      |
| CONTRACTORS                   | 5/18/2016                                     | 53   | 5/18/16  | 53  | 2/17/2016                             | 56                                       |





# MSHA Inspection Summary

| <i><b>TOTAL BY DIVISIONS</b></i>     |                       |                           |                     |
|--------------------------------------|-----------------------|---------------------------|---------------------|
| <i><b>DIVISION</b></i>               | <i><b>S&amp;S</b></i> | <i><b>NON S&amp;S</b></i> | <i><b>TOTAL</b></i> |
| MAINTENANCE SERVICES                 | 2                     | 1                         | 3                   |
| HYDROMET                             | 1                     | 2                         | 3                   |
| LEACHING                             | 0                     | 0                         | 0                   |
| MORENCI CONCENTRATOR                 | 15                    | 26                        | 41                  |
| METCALF CONCENTRATOR                 | 2                     | 7                         | 9                   |
| CRUSH & CONVEY                       | 4                     | 6                         | 10                  |
| <b>PROCESSING ORGANIZATION TOTAL</b> | <b>24</b>             | <b>42</b>                 | <b>66</b>           |
| MINE MAINTENANCE                     | 2                     | 3                         | 5                   |
| FRAGMENTATION/ LOADING/ SUPPORT      | 0                     | 0                         | 0                   |
| HAULAGE                              | 1                     | 1                         | 2                   |
| <b>MINE ORGANIZATION TOTAL</b>       | <b>3</b>              | <b>4</b>                  | <b>7</b>            |
| <b>ADMINISTRATION</b>                | <b>0</b>              | <b>0</b>                  | <b>0</b>            |
| <b>CONTRACTORS</b>                   | <b>2</b>              | <b>1</b>                  | <b>3</b>            |
| <b><i>INSPECTION TOTAL</i></b>       | <b><i>29</i></b>      | <b><i>47</i></b>          | <b><i>76</i></b>    |

# Near Miss

## Incident Detail

|                          |  |            |                |
|--------------------------|--|------------|----------------|
| <b>Date</b>              | 06.02.2016   |            |                |
| <b>Organization</b>      | Mine   |            |                |
| <b>Division</b>          | Fragmentation-Loading/ Support   |            |                |
| <b>Potential Risk</b>    | <b>3</b>   | <b>2</b>   | <b>6</b>       |
|                          | Consequence  | Likelihood | Potential Risk |
| <b>Brief Description</b> | Layne Drilling Contractors were left inside the 1500ft blast zone for the shots. |            |                |

## Best Practices

1. Conduct a thorough risk assessment, to include line of fire, prior to starting work.
2. Ensure communication between departments
3. Areas should be double checked when clearing for blasts.



# Property Damage

## Incident Detail

|                          |   |            |                |
|--------------------------|---|------------|----------------|
| <b>Date</b>              | 06.06.2016  |            |                |
| <b>Organization</b>      | Mine  |            |                |
| <b>Division</b>          | Haulage   |            |                |
| <b>Potential Risk</b>    | <b>3</b>  | <b>2</b>   | <b>6</b>       |
|                          | Consequence   | Likelihood | Potential Risk |
| <b>Brief Description</b> | While traveling down the 801 ramp the 623HT saw the 592HT slowed down in front of it and reduced speed causing it to go into a slide. The 623HT was going approximately 18MPH when the retarder and service brakes were applied. The 623HT slid 180 ft. and the bed made contact with the non-cab side guard rail of the loaded 571HT that was traveling up the ramp. The 801 ramp was heavily watered. |            |                |

## Best Practices

1. Drive to road conditions
2. Follow roadway watering procedures





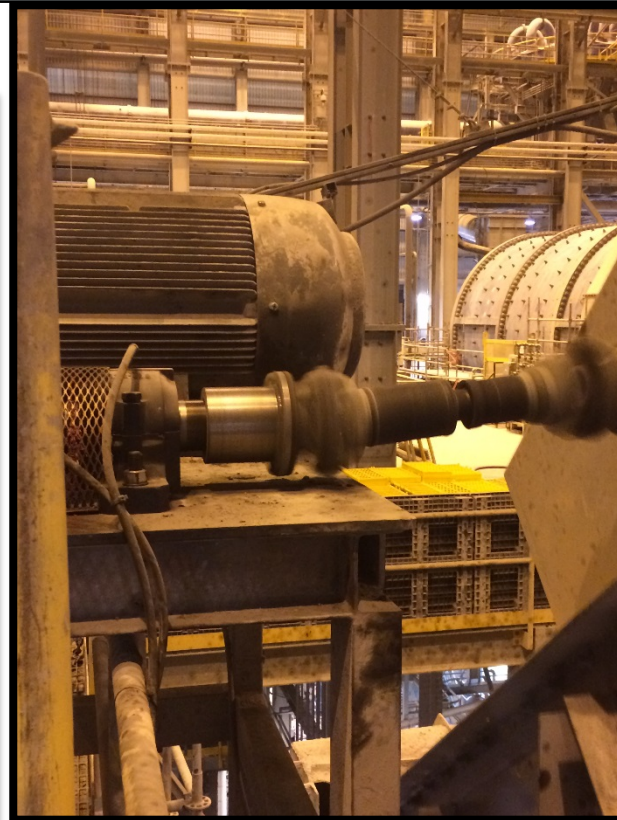
# Near Miss

## Incident Detail

|                          |  |            |                |
|--------------------------|--|------------|----------------|
| <b>Date</b>              | 06.12.2016   |            |                |
| <b>Organization</b>      | Processing   |            |                |
| <b>Division</b>          | Metcalf Concentrator   |            |                |
| <b>Potential Risk</b>    | <b>4</b>   | <b>2</b>   | <b>8</b>       |
|                          | Consequence  | Likelihood | Potential Risk |
| <b>Brief Description</b> | Employee reported that the #2 Wet screen drive shaft (Weighing approximately 30 lbs) broke off and landed approximately 60 feet to the ground. No employees were in the area. Safety will be investigating it further to classify the event. |            |                |

## Best Practices

1. Ensure adequate workplace exams are conducted.
2. Update PM process to identify potential failures
3. Identify and Implement controls to prevent reoccurrence of failure



# First Aid

## Incident Detail

|                          |  |            |                |
|--------------------------|--|------------|----------------|
| <b>Date</b>              | 06.17.2016   |            |                |
| <b>Organization</b>      | Processing   |            |                |
| <b>Division</b>          | Morenci Concentrator   |            |                |
| <b>Potential Risk</b>    | <b>4</b>   | <b>2</b>   | <b>8</b>       |
|                          | Consequence  | Likelihood | Potential Risk |
| <b>Brief Description</b> | Two Tailings mechanics were tasked with welding brackets onto the frame for the cylinoid so they can place a switch to control the valve. They went and shut the valve off. Employees were waiting on the operator to come so they could show him how to open and close the valve if needed to. Employees then heard a loud pop and were soaked with water. Both employees turned and started to run as they didn't know what had happened. As one employee was running he still had his welding shield on. His shield had been down because he water that was coming down had pushed it down. Employee ran into something (shield was down he couldn't see). Co-worker then helped guide employee. Once out of area safely they were able to see that the #2 train discharge sweep blown off just above them hanging on by two hooks and the handrail from keeping it from falling below. Investigation is ongoing. |            |                |

## Best Practices

1. Conduct a thorough JSA prior to starting task
2. Review SOP and identify procedures and sequences for denergizing
3. Train employees on system operations





# First Aid

## Incident Detail

|                          |  |            |                |
|--------------------------|--|------------|----------------|
| <b>Date</b>              | 07.01.2016   |            |                |
| <b>Organization</b>      | Processing   |            |                |
| <b>Division</b>          | Maintenance Services   |            |                |
| <b>Potential Risk</b>    | <b>4</b>   | <b>3</b>   | <b>12</b>      |
|                          | Consequence  | Likelihood | Potential Risk |
| <b>Brief Description</b> | At Approximately 7:25 a.m. a single locomotive, #50, pulled out of the locomotive shop to travel up to Morenci Mill. After pulling away from the shop the operator of the locomotive lost his brakes. He was not able to gain control of the locomotive and it went unmanned towards the Columbine Gate. The locomotive went off the tracks shortly after the columbine gate. The train tipped on its side after coming off the tracks hitting a semi truck head on. |            |                |

## Best Practices

1. Complete a pre-shift inspection prior to operation.
2. Upon completion of maintenance, ensure equipment is operational ready.







# First Aid

## Incident Detail

|                          |  |            |                |
|--------------------------|--|------------|----------------|
| <b>Date</b>              | 07.10.2016   |            |                |
| <b>Organization</b>      | Processing   |            |                |
| <b>Division</b>          | Crush & Convey   |            |                |
| <b>Potential Risk</b>    | <b>2</b>   | <b>3</b>   | <b>6</b>       |
|                          | Consequence  | Likelihood | Potential Risk |
| <b>Brief Description</b> | An employee was assisting in the retiring of ultra portable RP8 and was adjusting the cable and pot head on the cable behind the horizontal feed conveyor when he received a shock |            |                |

## Best Practices

1. Always complete a thorough pre-shift inspection/ Workplace Exam/ JSA
2. Ensure personnel receive the proper training for the task.
3. Utilize the Stop Work Authority



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# Sierrita – Crusher Dump Pocket

The A-side primary crusher was undergoing a scheduled mantle change. Typically schedule crusher maintenance is communicated to Mine Ops in the morning tailgate meeting; however, it did not occur on this day.

Three mechanics were assigned to work in the dump pocket. At the time of the event the rock breaker was staged in front of the dump pocket and the crane hook was lowered into the crusher. The critical control of hard barricading in front of the bay was not in place, while the administrative control of a flashing red strobe light used to indicate to haultruck operators that the crusher is not accepting haultrucks was active.

While the mechanics were performing work in the dump pocket a fully loaded Caterpillar 793 Haultruck began backing into the A-side crusher bay. When the 3 mechanics heard the haul truck backing up and saw the loaded truck was in position to dump they hurried to exit out of the dump pocket via the stairs.

After fully backing into the bay and striking the rock hammer, the truck driver heard an alarm sounded by the crusher operator causing him to stop. At that time he noticed that the red strobe light was on, indicating that dump pocket was down. He pulled out and proceeded to move to the B primary crusher (bay #4) to dump out.



# Sierrita – Crusher Dump Pocket

## OTHER SIGNIFICANT RISK (specific to site or task not categorized as global)

1. Flagging and Barricading. During maintenance activity inside the crusher dump pocket, dumping of haul trucks is prohibited. Access by haul trucks is controlled by a hard barricade that was not in place at the time of the event.
2. Failure to follow a SOP.
  - A physical barricade must always be placed prior to personnel entering the dump pocket.
  - A red strobe light indicates Haul Trucks are not to back into the crusher bay.

## ABSENT / INSUFFICIENT CONTROLS CONTRIBUTING TO THE EVENT

- Critical controls not in place or ineffective
  - Failure to place physical barricade.
  - Flashing strobe light was not noticed by the haul truck operator.
- A-side maintenance was not communicated in the morning tailgate meeting.
- The pre-job JSA did not indicate the need for the hard barricading.
- The SOP for the job had not been updated with the current method of hard barricading (jersey barrier).

# Sierrita – Crusher Dump Pocket



# Sierrita – Crusher Dump Pocket





# Sierrita – Crusher Dump Pocket





# Morenci Runaway Locomotive

## DESCRIPTION / DETAILS OF ADVISORY

A locomotive pulled out of the repair bay approximately 100 yards to be returned into service after preventative maintenance. As the locomotive was approaching an area where the tracks descend on a 3% grade, the engineer noticed the brakes were not functional. Engineer asked the groundsman walking beside the locomotive to check the position of the brake pistons. It was identified the brakes were not engaged and the locomotive continued to gain speed. He further attempted to stop the locomotive with the emergency and dynamic brakes. When the operator realized he had lost control of the locomotive, he called a Mayday on the radio and dismounted off the stairway.

The locomotive traveled approximately half a mile gaining speed towards the railroad crossing at the mill site security gate, where traffic and delivery trucks enter/exit the property. When the locomotive reached a curve near the truck crossing the weight and momentum caused the locomotive the lay over on its left side. It slid approximately 130 feet and impacted a semi-tractor that was stopped at the crossing waiting to enter the mine in the inbound lane. The locomotive's trucks separated from the body when it laid on its side. The leading locomotive-truck rolled approximately 300 feet until it impacted a metal power pole, where it came to a stop. Another semi coming on property had just crossed the tracks.

Initial investigation revealed the air for the braking system was not valved in after maintenance was performed and this was not identified during the pre-shift examination. The sole injury was a sprain/strain experienced by the semi-truck operator.

## ABSENT / INSUFFICIENT CONTROLS CONTRIBUTING TO THE EVENT

Post equipment check for placing equipment back in service  
Placement of derailleurs

# Morenci Runaway Locomotive





# Morenci Runaway Locomotive

Locomotive Shop



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## MSHA Citations