



**FREEPORT-McMoRAN**

# January 2016 Contractor Safety Meeting



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# Overview

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- 2016 Updates
- Gas monitoring implementation
  - Sreenath Thota
- Parking policy update
- Training classes update
- Environmental
  - Cynthia Christenson
- LOTOTO addendum





# ***2016 Updates***





## *2016 Updates*

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- Cliff Mull has moved to Mine Maintenance
- Multiple new documents have been added to the contractors website:
  - <https://fcx365-public.sharepoint.com/morenci>
- TRIR reports: please send to:
  - [Amy\\_Sammito@fmi.com](mailto:Amy_Sammito@fmi.com)
  - [Sophia\\_Jinbo-Doran@fmi.com](mailto:Sophia_Jinbo-Doran@fmi.com)



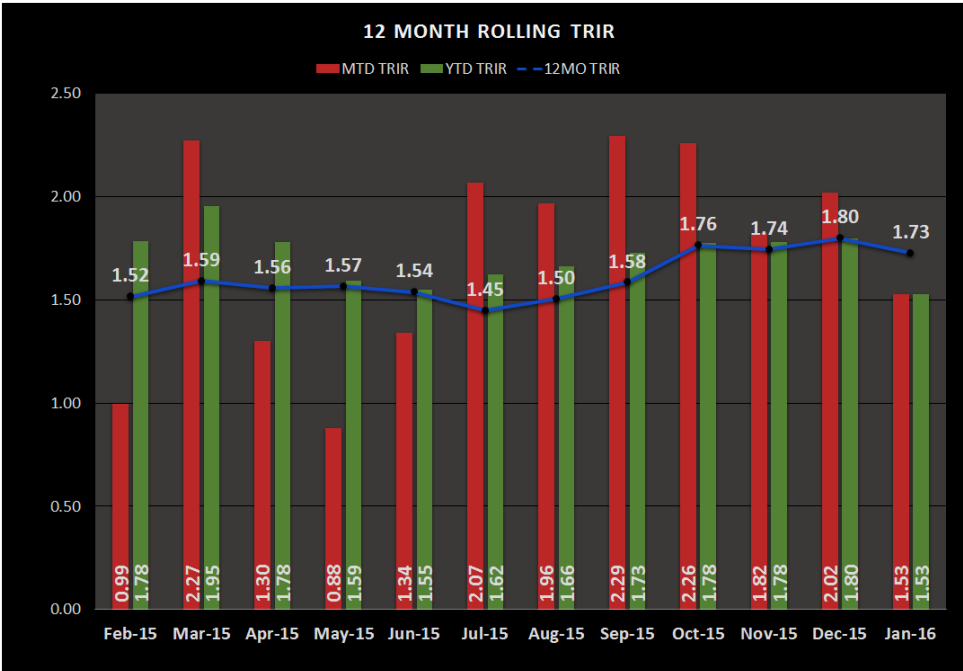


# 2016 Updates

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- TRIR target for contractors has not been decided.

TRIR BREAKDOWN	MTD REP	MTD TRIR	YTD REP	YTD TRIR	1 <sup>st</sup> QTD REP	1 <sup>st</sup> QTD TRIR
FMMO	2	2.05 194839	2	2.05 194839	2	2.05 194839
CONTRACTORS	0	0.00 66855	0	0.00 66855	0	0.00 66855
CURRENT TOTAL MORENCI ALL	2	1.53 261694	2	1.53 261694	2	1.53 261694







# 2016 Update

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<i>Division</i>	<i>Date of Last Rep. Injury (FMMO)</i>	<i># of Days w/o Rep. Injury (FMMO)</i>	<i>Date of Last Rep. Injury (Contractors)</i>	<i># of Days w/o Rep. Injury (Contractors)</i>	<i>Date of Last HEHI Event</i>	<i># of Days w/o a HEHI Event</i>
MAINTENANCE SERVICES	8/25/2015	138	9/14/15	118	8/1/2015	131
HYDROMET & CLP	12/6/2015	35	3/27/15	289	6/10/2015	202
LEACHING	11/17/2015	54	12/18/15	23	2/25/2015	258
MORENCI CONCENTRATOR	11/18/2015	53	8/25/15	138	2/10/2015	352
METCALF CONCENTRATOR	11/5/2015	66	8/8/15	155	3/3/2015	313
CRUSH & CONVEY	10/14/2015	88	11/10/15	61	7/28/2015	166
MINE MAINTENANCE	12/24/2015	17	10/18/15	84	9/25/2015	107
FRAGMENTATION/LOADING/SUPPORT	7/26/2015	168	4/19/12	1368	5/7/2015	248
HAULAGE	1/7/2016	3	8/1/2008	2930	5/7/2015	248
RESOURCE MANAGEMENT	11/17/2014	419	11/6/14	430	1/5/2016	5
ADMINISTRATION	2/10/2015	352	9/15/15	117	1/1/2014	740
MERCANTILE	12/28/2015	13	3/3/15	313	1/1/2014	740
CONTRACTORS	12/18/2015	23	12/18/15	23	9/10/2015	122





# ***Gas Monitoring Implementation***

Sreenath Thota  
(928)865-6740





## ***OFF GAS Monitoring – Personal Monitors***

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# **Off Gas Monitoring Requirements To Be Implemented January 18, 2016**

The areas subject to these entry requirements are the following:

### **Fixed Locations -**

- Crush/Convey Agglomeration Drum area
- Metcalf Raff Booster
- Stargo 4500 Raff Boster
- Ponderosa Raff Booster

### **Leach Pads -**

- **All ROM dumps that are in active leach** (excludes areas that are being dumped in, areas that have been stripped out, and roads and ramps that are not piped)
- **Stargo MFL stockpile** (excludes roads and ramps used to access active leach fields, but includes stripped areas ahead of stacker)
- **Southwest MFL stockpile - includes stripped areas ahead of and around stacker.**






# Contacts

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<b>-Leaching</b>	
Beverly Scroggins	928-965-0771
Sophia Mesa	
<b>-Crush/Convey</b>	
James Chavez	928-865-6850
Jeff Long	928-965-4704
<b>-Hydromet</b>	
Jody Beck	928-965-8166
Casey Clayton	928-215-9334
Brandon Wellbrook	928-965-0265

<b>-Training</b>	
Christina Carling	928-965-6017
Gijo Verdugo	928-965-5079
Albert Ortega	928-965-8012




**Falconer McElharran  
Curran & Galt**  
 Morenci Operations

Standard Operating Procedure

SOP Title:	Addressing Sulfuric Acid Addition/Dilution Sites – Fixed Monitors (hazardous gas may be present)
Division/Area:	Leaching/Hydromet/Grush and Convey

	Name/Title:	Date:
Drafted/Revised By:	The MX6 Gas Monitor Team	12/17/15
Approving Superintendent:	Rick Sanchez/Leaching Superintendent	12/17/15
Approving Manager:	Paul Cook/Leaching Manager	12/17/15

SOPs must have Manager approval prior to distribution.

#### Required PPE

Hardhat, steel toe boots, safety vest, safety glasses, two-way radios (that monitor the FM1 frequency), personal air monitors to monitor suspect gases NO<sub>2</sub> (Nitrogen Dioxide), SO<sub>2</sub> (Sulfur Dioxide), H<sub>2</sub>S (Hydrogen Sulfide), CO<sub>2</sub> (Carbon Dioxide) & O<sub>2</sub> (Oxygen), NH<sub>3</sub> escape respirator.

#### Personnel Affected

All employees/contractors/vendors within areas designated on signage at each acid addition/dilution sites & Agglomeration Drums.

#### Sites Affected

1. Agglomeration Drums
2. Metcalf Booster
3. 4500 Stargo
4. Ponderosa

#### Environmental

Report all Environmental events. 928-585-7745

#### Operating Procedure (Step/Control):

1. Task training will be given to all employees/contractors/vendors that will be working in one of the affected areas, task training will be a classroom setting by a trainer in the affected area
2. Only Task Trained employees have permission to access the sites affected that are listed above.
3. Contact Control Room Operators in the affected area prior to entry. Entry into the area is only permitted if and only if a business needs exists. If positive communication cannot be reached with the Control Room, contact the Supervisor of the area prior to entry.
4. Determine and understand evacuation muster point based on windsock and uphill conditions. Signage posted will give evacuation muster point locations.
5. Personal Monitors shall be worn one of two ways, either on the employees hip/belt area or on shoulder/chest area within 18in of employee's airway.
6. After required work is complete, make positive contact Control Room Operator or Area Supervisor upon leaving the area.

Revision: 5

Date: 12/17/15

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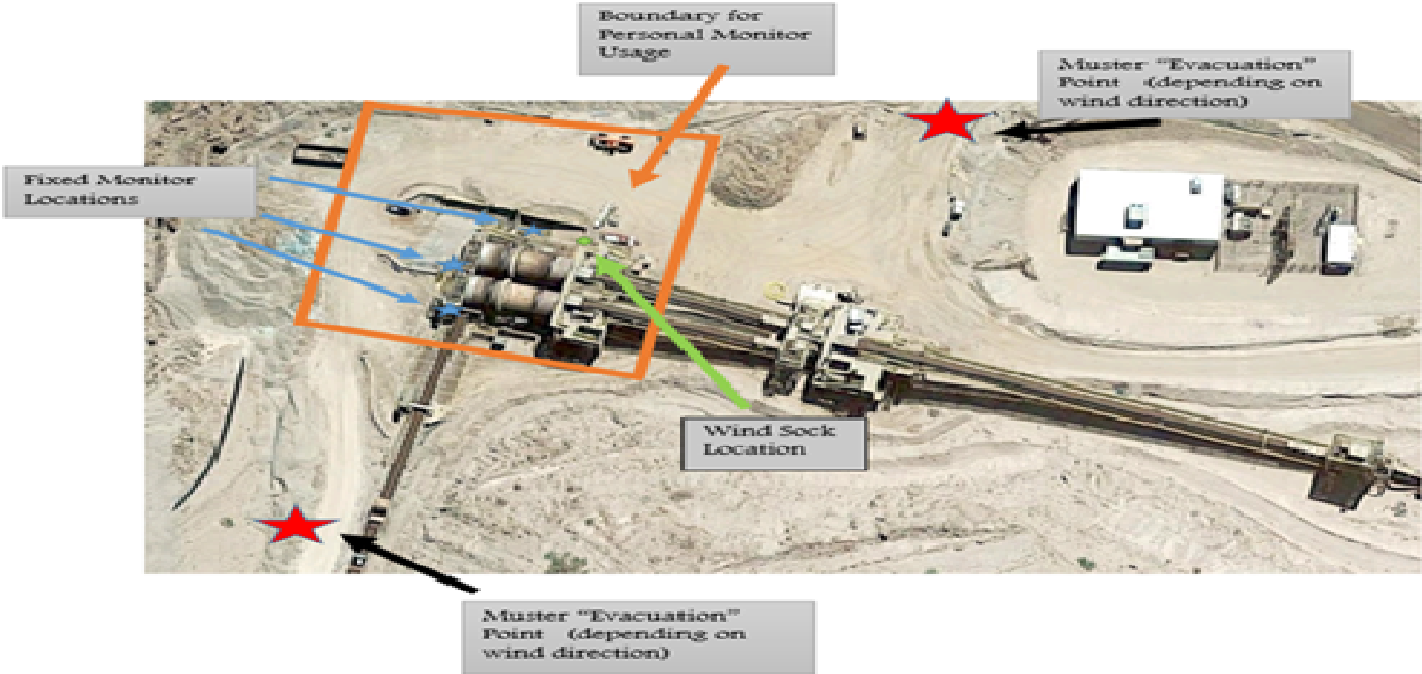
**10**



# Maps & Fixed Monitor Locations

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- Agglomeration Drums



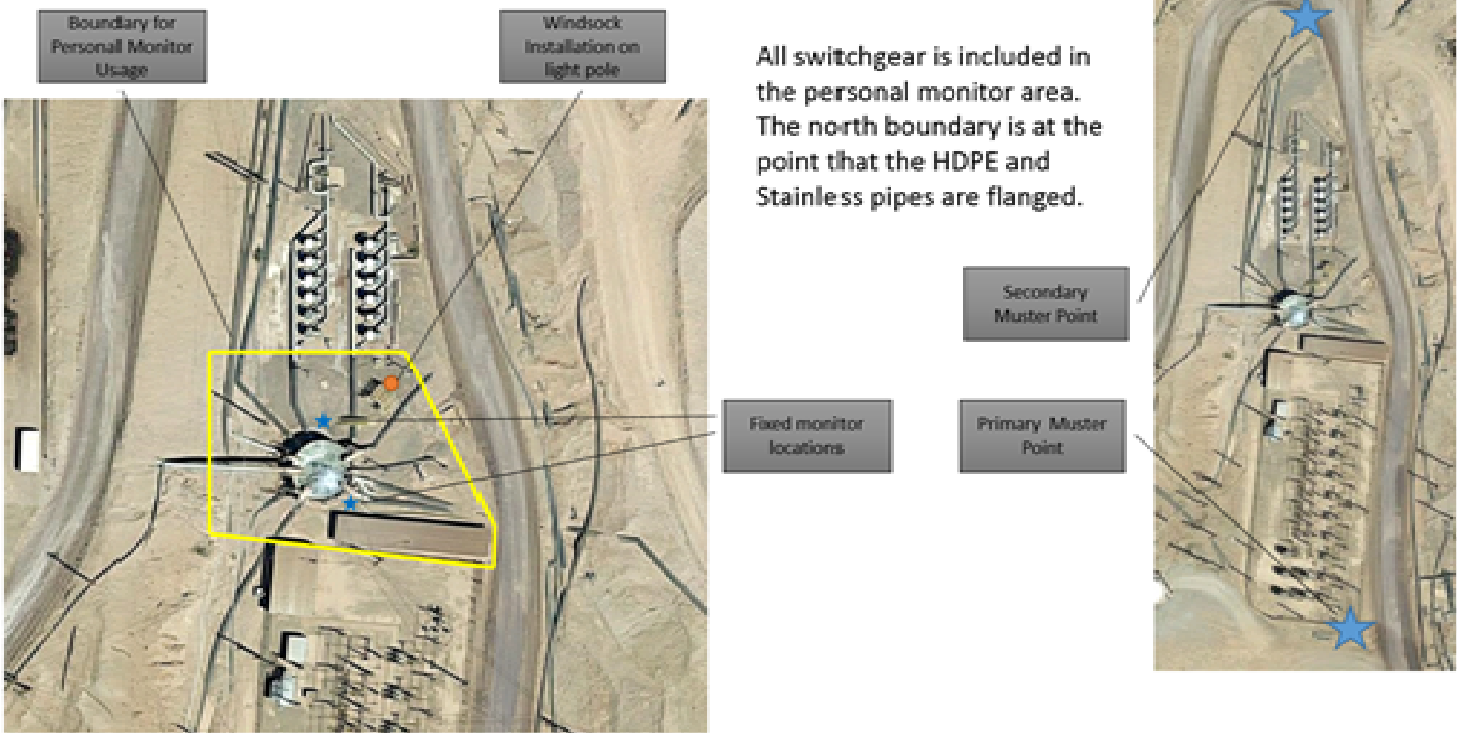


# Maps & Fixed Monitor Locations

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- Metcalf Booster Area:

METCALF BOOSTER:

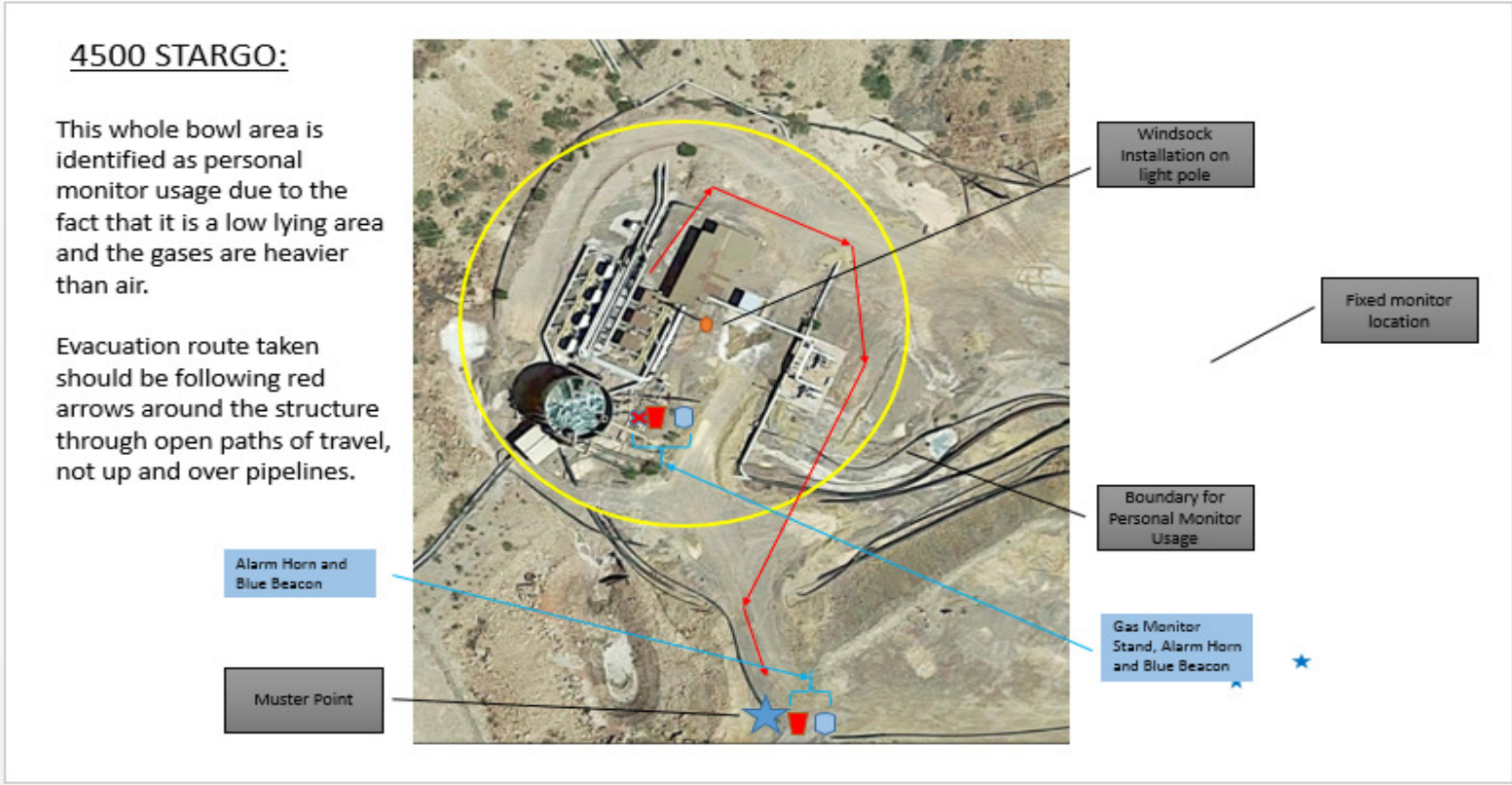




# Maps & Fixed Monitor Locations

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- 4500 Stargo Area:







# Maps & Fixed Monitor Locations

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- Ponderosa Area:

Ponderosa:

The area with the pumps is lower than the tank and should be included in the evacuation if the fixed monitor is alarming.







# ***I Bird – MX6 5 gas Monitor to be used***

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## **Gases Monitored – O2, CO2, SO2, H2S, NO2**

## **NO LEL Sensors so these are not confined space monitors!**

- Low-level: Low frequency beeps with a long delay
- High level: High frequency with short delay







# Sensor Configurations & Alarm Set Points

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SENSOR	ABBREVIATION	INSTRUMENT ALARM SETTINGS	
		LOW	HIGH
Oxygen	O2	19.50%	23.50%
Carbon Dioxide	CO2	35 ppm 0.5% VOL	70 ppm 3.0% VOL
Hydrogen Sulfide	H2S	10 ppm	20 ppm
Sulfur Dioxide	SO2	2 ppm	4 ppm
Nitrogen Dioxide	NO2	3 ppm	5 ppm





# *NH15 Escape Respirator*

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- NH15 Escape Respirator Video
- <https://www.youtube.com/watch?v=6GGyyO92Q94>





## VALUE AT OUR CORE

- Link for FCX Gas Policy:

<https://fmweb.fmi.com/sites/HSPRO/Policies%20%20Guidelines/Hazardous%20Gas%20Policy%20v4%2018%20March%202015.pdf>

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# ***Parking Policy***





# *Parking Policy*

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- ~~Effective January 1, 2016.~~
- Chocks ordered did not arrive.
- Effective date has been pushed back to January 31, 2016.
- Physical demonstration.





# ***Training Classes***





# Training Classes

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## Classes

Class	Time	Maximum Students	Refresher Frequency
Fall Protection	6-8 Hrs	20	Annually
Fall Protection Refresher	2 Hrs	25	Annually
LOTOTO	4 Hrs	25	Annually
LOTOTO Refresher	2 Hrs	25	Annually
Confined Space Entry	6 Hrs	25	Annually
Confined Space Refresher	2 Hrs	25	Annually
Restricted Access (Flagging, Barricading, Open Hole)	3 Hrs	25	Annually
Blue Stake	2 Hrs	25	Every 5 years
600V Switch/Reset	3 Hrs	25	Annually

Forklift Counter Balance	7 Hrs	15	Every 3 Years
Forklift Telescopic	6 Hrs	15	Every 3 Years
Mobile Crane (2 days)	16 Hrs	15	Every 3 Years
Overhead Crane (2 day)	16 Hrs	15	Every 2 Years
Rigging Calculations	4-6 Hrs	20	No
Technical Rigging (2 days)	16 Hrs	15	Every 2 Years
Aerial Platform	6 Hrs	15	Every 3 Years





# Training Classes

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Morenci Training Calendar		
January & February 2016		
(928) 865-6930 or (928) 865-7784		
Please note that <u>this schedule is subject to change</u> and classes may fill. Pre-enrollment is required.		
<b>LOTOTO:</b>	<b>CONFINED SPACE REFRESHER:</b>	<b>LVA DRIVER REFRESHER:</b>
1/5/2016 7:00	1/6/2016 2:00	1/6/2016 7:00
1/12/2016 7:00	1/13/2016 11:00	1/20/2016 7:00
1/19/2016 7:00	1/20/2016 2:00	2/3/2016 7:00
1/26/2016 7:00	1/27/2016 11:00	2/17/2016 7:00
2/2/2016 7:00	2/3/2016 2:00	
2/2/2016 7:00	2/10/2016 11:00	
2/9/2016 7:00	2/17/2016 2:00	<b>FALL PROTECTION REFRESHER:</b>
2/16/2016 7:00	2/24/2016 11:00	1/6/2016 7:00
2/23/2016 7:00		1/13/2016 1:00
		1/20/2016 12:00
		1/27/2016 1:00
<b>RESTRICTED AREA ACCESS:</b>	<b>600 VOLT SWITCH RESET:</b>	2/3/2016 12:00
1/5/2016 11:00	1/8/2016 7:00	2/10/2016 1:00
1/12/2016 11:00	2/5/2016 7:00	2/17/2016 12:00
1/14/2016 1:00		2/24/2016 1:00
1/19/2016 11:00	<b>COUNTERBALANCE FORKLIFT:</b>	
1/26/2016 11:00	1/20/2016 7:00	<b>FULL ACCESS PIT DRIVER</b>
1/28/2016 1:00	2/3/2016 7:00	<b>REFRESHER:</b>
2/2/2016 11:00	2/17/2016 7:00	1/8/2016 7:00
2/2/2016 11:00		1/8/2016 9:30
2/9/2016 11:00		1/15/2016 7:00
2/11/2016 1:00	<b>AERIAL PLATFORM:</b>	1/15/2016 9:30
2/16/2016 11:00	1/22/2016 7:00	1/22/2016 7:00
2/23/2016 11:00	2/19/2016 7:00	1/22/2016 9:30
2/25/2016 1:00		1/29/2016 7:00
	<b>BLUE STAKE</b>	1/29/2016 9:30
<b>HDPE Handling &amp; Guidelines:</b>	1/4/2016 1:00	2/5/2016 7:00
1/18/2016 7:00	1/11/2016 1:00	2/5/2016 9:30
2/15/2016 7:00	1/18/2016 1:00	2/12/2016 7:00
	1/25/2016 1:00	2/12/2016 9:30
<b>FALL PROTECTION:</b>	2/1/2016 1:00	2/19/2016 7:00
1/8/2016 7:00	2/8/2016 1:00	2/19/2016 9:30
1/15/2016 7:00	2/15/2016 1:00	2/26/2016 7:00
1/22/2016 7:00	2/22/2016 1:00	2/26/2016 9:30
1/29/2016 7:00	2/29/2015 1:00	
2/5/2016 7:00		<b>OVERHEAD CRANE: TWO DAYS</b>
2/12/2016 7:00	1/20/2016 7:00	1/13/2016 7:00
2/19/2016 7:00	2/17/2016 7:00	2/10/2016 7:00
2/26/2016 7:00		
	<b>LVA DRIVER TRAINING (INITIAL):</b>	
<b>TECHNICAL RIGGING: TWO DAYS</b>	1/6/2016 9:00	
1/11/2016 7:00	1/20/2016 9:00	
1/18/2016 7:00	2/3/2016 9:00	
2/8/2016 7:00	2/17/2016 9:00	
2/15/2016 7:00		





# Training Classes

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<p>Morenci Training Calendar January &amp; February 2016 (928) 865-6930 or (928) 865-7784</p> <p>Please note that <u>this schedule is subject to change</u> and classes may fill. Pre-enrollment is required.</p>	
<p><b><u>FULL ACCESS PIT DRIVER</u></b> <b><u>REFRESHER:</u></b></p> <p>1/8/2016 7:00 1/8/2016 9:30 1/15/2016 7:00 1/15/2016 9:30 1/22/2016 7:00 1/22/2016 9:30 1/29/2016 7:00 1/29/2016 9:30 2/5/2016 7:00 2/5/2016 9:30 2/12/2016 7:00 2/12/2016 9:30 2/19/2016 7:00 2/19/2016 9:30 2/26/2016 7:00 2/26/2016 9:30</p>	<p><b><u>LOTOTO Refresher:</u></b> <b><u>1/12/2016 14:00</u></b> <b><u>1/19/2016 14:00</u></b> <b><u>1/26/2016 14:00</u></b> <b><u>2/2/2016 14:00</u></b> <b><u>2/9/2016 14:00</u></b> <b><u>2/16/2016 14:00</u></b> <b><u>2/23/2016 14:00</u></b></p>
<p><b><u>Full Access Pit Driving</u></b> <b><u>TRAINING (INITIAL):</u></b></p> <p><b><u>1/8/2016 12:00</u></b> <b><u>1/15/2016 12:00</u></b> <b><u>1/22/2016 12:00</u></b> <b><u>1/29/2016 12:00</u></b> <b><u>2/5/2016 12:00</u></b> <b><u>2/12/2016 12:00</u></b> <b><u>2/19/2016 12:00</u></b> <b><u>2/26/2016 12:00</u></b></p>	
<p><b><u>CONFINED SPACE:</u></b></p> <p><b><u>1/4/2016 7:00</u></b> <b><u>1/11/2016 7:00</u></b> <b><u>1/18/2016 7:00</u></b> <b><u>1/25/2016 7:00</u></b> <b><u>2/1/2016 7:00</u></b> <b><u>2/8/2016 7:00</u></b> <b><u>2/15/2016 7:00</u></b> <b><u>2/22/2016 7:00</u></b> <b><u>2/29/2016 7:00</u></b></p>	





# ***Environmental***

Cynthia Christenson  
(928)865-6512





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# ***Waste Generation and Handling***

***12 January 2016***



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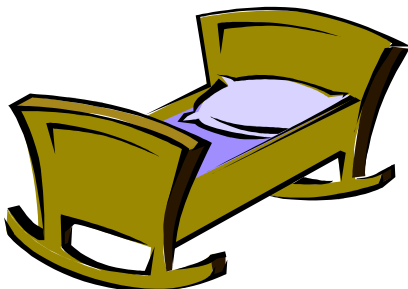


# Resource Conservation and Recovery Act (RCRA)

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## Provides the framework of the life cycle of hazardous waste

Point of Generation



Cradle



Final Destination



Grave

The Arizona Department of Environmental Quality (AZDEQ) manages this act in Arizona for the Environmental Protection Agency (EPA). It can be found in Title 40 of the Code of Federal Regulations (CFR).

### Goals of this Act:

- Protect human health and environment
- Conserve energy and natural resources
- Reduce amount of waste generated
- Manage waste in an environmentally sound way

*Waste Generation and Handling*





## *Resource Conservation and Recovery Act (RCRA)*

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### **A Solid Waste is:**

- Abandoned
- Recycled
- Considered inherently waste-like
- Military munitions



### **A Hazardous Waste is a:**

- Solid waste
- Listed waste (F and K from specific sources, P and U are pure product)
- Characteristic waste (can be...)

**Toxic**

**Reactive**

**Ignitable**

**Corrosive**



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# ***Hazardous Waste Management***

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## **Hazardous Wastes May Not be Disposed of by:**

- Dumping down the drains  
(floor drains, sinks, etc.)
- Discharging into sewers  
(sinks, toilets, etc.)
- Throwing away in trash  
(dumpsters, roll-offs, hoppers, bins, etc.)
- Evaporating into atmosphere  
(leaving lids off of drums/containers, etc.)
- Diluting with non-hazardous material/waste



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# ***Hazardous Waste Management***

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- Satellite Accumulation Areas (SAAs) hold hazardous waste and must be at or near the point of generation
- Write date on drum/container ONLY when full, then contact the Environmental Services Waste Group to empty
- When full, the drum/container MUST be transported to the Central Accumulation Area within 3 days
- Only 55 gallons total of one type of hazardous waste may be accumulated at one area

**Example: there may be one 55-gallon aerosol next to one 55-gallon broken light bulb SAA drums**

- Only 1 quart total of acutely hazardous waste may be accumulated at one area (mainly P-listed wastes)

*Waste Generation and Handling*





# ***Hazardous Waste Management***

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- Satellite Accumulation Area (SAA) drums/containers must be approved by the Department of Transportation (DOT) AND the Environmental Services Waste Group

Satellite Accumulation  
Area #126  
Hazardous Waste  
Broken Lights

- Drums/containers must be clearly marked with "Hazardous Waste", "Satellite Accumulation Area", contents, and proper area number



*Waste Generation and Handling*





***Environmental Department***

***928-865-6000***

***Cynthia Christenson***

***928-965-1030***





# ***LOTOTO Addendum***





# *LOTOTO Training*

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## **FMI Employees and Contractors must be trained in LOTOTO.**

Without proper training, they must be **escorted by a qualified individual trained in the LOTOTO procedures of the area or piece of equipment.**

### **Qualified Individual:**

An employee that through training and experience is familiar with the operation and safety hazards of the machinery or equipment being worked on.

A Qualified individual also:

- Is capable of recognizing hazards associated with the work
- Is capable of avoiding hazards associated with the work
- Is approved to perform energy isolation and dissipation
- Is approved to perform energy measurement/testing and /or tryout





# Personal Locks

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All energy isolation (LOTOTO) locks will be **colored plastic bodied** safety locks. Other locks are not acceptable for energy isolation with no exception. These locks shall not be used for any purpose other than LOTOTO. **A single lock or keyed alike locks will have only one key.** This key is to be kept in the possession of the affected individual. Spare keys will be destroyed.



Each individual **shall place their personal lock and tag** on all energy isolating devices or the multiple lockout device(s), which controls the energy source(s) to the area in which the individual is working, **no one else can do this for you.** Each lock will be accompanied by an approved tag. Each individual shall place and remove his/her own lock and tag. When these lock(s) are placed, the single key must be placed under the exclusive control of the employee performing servicing and/or



<b>ECC Name:</b>		<b>Equipment ID:</b>	
<b>Contact Info:</b>		<b>Date:</b>	
<b>Supervisor:</b>			
<b><u>WARNING!</u></b>			
<b>If the equipment is not listed here, it is <u>not locked out!</u></b>			
<b>REASON FOR LOTOTO:</b>			
<hr/>			
List all Equipment Secured by the ECC device(s)	Energy Verification/ Tryout	Name of Qualified Individual (who isolated the energy source(s))	Name of Qualified individual (who released the energy source(s))
<b>ECC Signature:</b>			
<b>Signature of New ECC if transferred:</b>			

This should be signed only after the current ECC and the incoming ECC have had a "One on One" discussion to insure that all equipment listed on this form has been properly locked out, tagged out & tried out.

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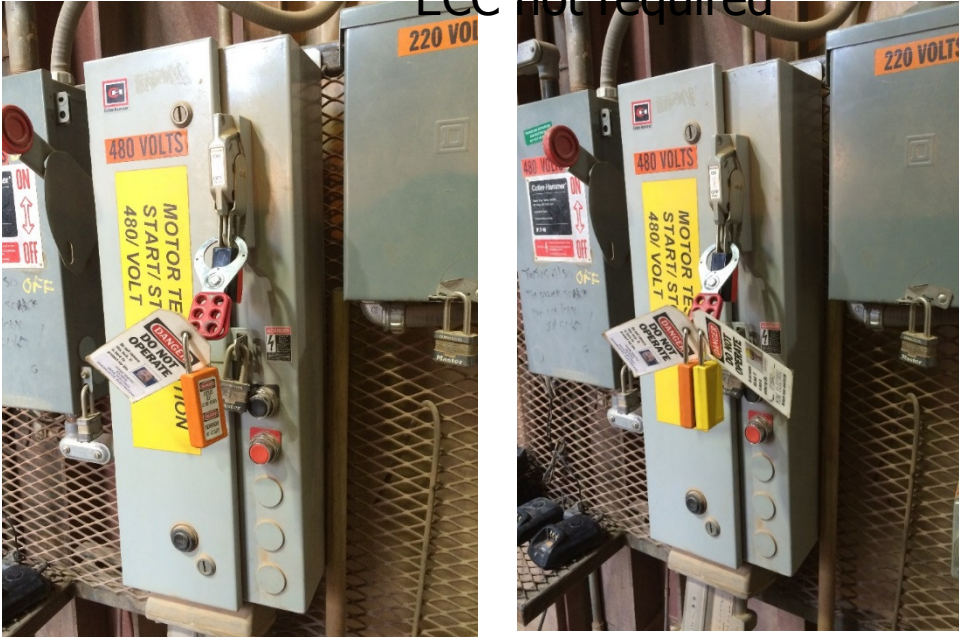
# *ECC Requirements*

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ECC required



ECC not required





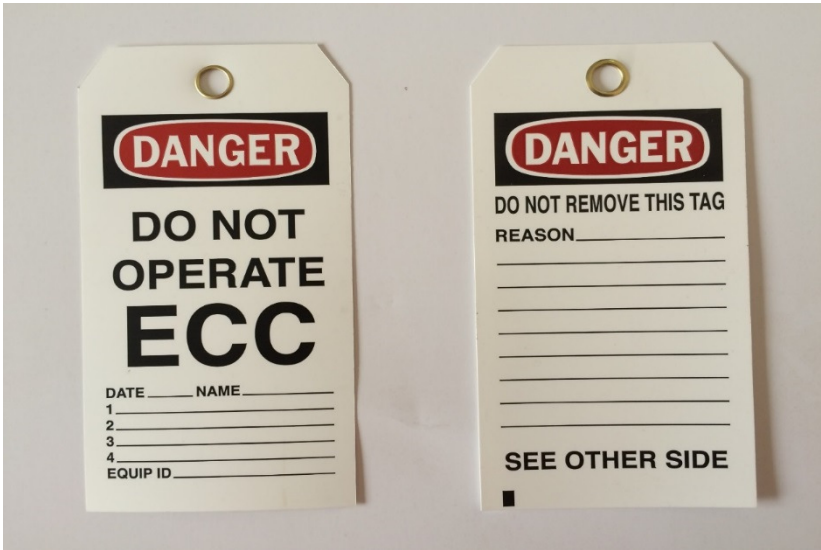


Tags shall be pre-printed with a clear warning of the hazard and type (Personal or ECC). A **picture ID and legible printed name of the employee** must be featured on the personal tag.

Picture required



Picture not required







# *Out OF Service*

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**Out-of-Service tags shall be accompanied with a lock.**

They will not be used during service or maintenance of equipment (Plastic bodied LOTOTO locks cannot be used).

