

BMP 100 Spray Painting

Why do we regulate spray painting?

Safford's air quality permit states that the permittee shall not cause, allow, or permit emissions from spray painting operations in excess of 20%. This BMP covers the requirements for architectural, shovel, haul truck and drill rig spray painting.



What products can I use?

Only products that have been approved may be used onsite. This includes products used by contractors.

Do I need approval?

Yes. An MOC must be completed and approved before painting occurs. This should include start date, duration, controls, and products used.

Criteria for Painting Activities

- Utilize control equipment that captures 96% of overspray
- Utilize low solvent content products (i. e. water based)
- Only use products that have been approved
- All products shall be kept in sealed containers



- **Left over paint products** may require specialized disposal. Refer to BMP 303 for guidance or contact Environmental Services with questions.
- This BMP **does not** apply to spray painting conducted using aerosol cans. Aerosol cans are exempt from air quality permit requirements. Refer to BMP 325 for additional information.
- **Architectural/Maintenance painting** can be performed outdoors but must meet the following criteria:
 - All coating/paint shall **not** contain photochemically reactive solvents.
 - No coating/paint may be thinned or diluted with any photochemically reactive solvents.

Shovel, Haul Truck and Drill Rig Spray Painting

- Painting large equipment can be performed outdoors but must occur within confines of the pit area
- Coating/Paint shall **not** contain photochemically reactive solvents and shall not be thinned or diluted with photochemically reactive solvents. Use water-based coatings when possible
- Should be performed using equipment designed to minimize overspray
- Coatings/Paintings must be kept off the ground by using drop clothes, sheeting, or other means
- If utilizing sand blasting to prep the painting surface refer to BMP 114 for additional guidance
- All leftover paint, debris, or waste from the project must be collected in drums for proper disposal. Contact Environmental Services for disposal guidance

Recordkeeping Requirements

- Each time a spray-painting project is conducted, the following must be recorded and provided to environmental: (a) date project was conducted; (b) duration of the project; (c) type of control measures employed; (d) SDS for all paints and solvents used; and (e) amount of paint consumed during the project

Need additional information?

Refer to BMP 100 or contact a member of FMSI Environmental Services-*Date:6/16/2022 Revision: 0*
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BMP 101 Open Burning

Why we manage Open Burning?

An Open Burn Permit is obtained from Arizona Department of Environmental Quality (ADEQ) which regulates when, what, and where we can burn on-site. An Open Burn Permit is renewed annually.

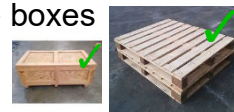


When can I burn?

- Start igniting no earlier than one hour after sunrise
- Fire must be extinguished two hours before sunset

What can I burn?

Brush, cut trees (up to 18 inches in diameter), grass, weeds, untreated wood/lumber and empty explosive boxes



What can't I burn?

Plastic bottles, used oil, oil filters, chemically treated wood, electrical wire insulation, thermal insulation, paint, cleaners and solvents, flammable liquids, tires, and anti-freeze



Where can I burn?

Material can be burned at a designated pile or burn pit.

Emissions Reduction Techniques (ERT's)

- Minimize the material being burned
- Prevent the fire from spreading by lining the area where the burn is being conducted.
- Allow the material to dry before burning.
- Minimize soil content in slash piles and by constructing piles under dry soil conditions or by using hand piling methods.
- Burn in piles.
- Extinguish the smoldering burns.

Open Burn Requirements

- Maintain minimum 50ft clearance from buildings
- Only start open burns with matches, flares, or hand-held torches (i.e. propane or butane)
- Fires can not be started using materials that may cause back smoke (i.e. oil, gasoline, diesel, tires)
- Notify the nearest firefighting agency prior to each burn
- Do not burn during an Air Pollution Emergency Episode or No Burn Day
- Do not burn during wind conditions that may disperse smoke into a populated area, cause visibility issues on roads or airports
- Responsible person shall be present at all times until the fire is completely extinguished
- Have necessary equipment to control the burn and to put the fire out if necessary
- Keep records of the date and time of each open burn, the purpose of each burn, the specific items that are ignited, and the quantity of items that are ignited.



Need additional information?

Refer to BMP 101 or contact a member of FMSI Environmental Services-*Date:6/16/2022 Revision: 0*
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BMP 103 Excess Emissions

Purpose: This document provides guidelines for FMSI employees in the event that an excess air emissions situation is encountered at operations



Emission Limitations and Standards

Acid Plant

Sulfur Dioxide (SO₂):
4lb/ton acid produced
100 lb/hr on a rolling 24-hr average
90 tons/year on a rolling 12-month average
Sulfuric Acid Mist (H₂SO₄):
0.15 lb/ton acid produced
Nitrogen Oxides (NO_x):
14.0 lb/hr
43.8 tons/yr
Opacity Standard: 10-20%



Crush Convey

Opacity Standard: 20%

Stemming Plants

Opacity Standard: 7-15%

Mine Ops/Site Wide

Opacity Standard: 40% fugitive dust emissions

What are Excess Air Emissions and how should they be reported?

- Excess emission situations are when suspected exceedances of emission limits or opacity standards or other air quality permit conditions listed in FMSI's Class II Air Quality Control Permit have occurred
- Operations are responsible for notifying FMSI Management and the Environmental Services Department of any suspected exceedances of emission limits or opacity standards or other air quality permit conditions listed in the FMSI's Class II Air Quality Control Permit
- The Environmental Department will evaluate the potential excess emissions situation and report excess emission exceedances to ADEQ following review of the incident with FMSI management and the Freeport-McMoRan Legal Department

If you think that a source is in violation of permitted emission, immediately notify either your area supervisor or Environmental Services. An excess emission must be reported to ADEQ within 24 hours of the occurrence, therefore prompt reporting by site divisions is essential to meet this deadline.

If excess emissions are not properly reported, criminal actions could be brought against anyone who knowingly violated the requirements of the site's Air Quality permit.

Need additional information?

Refer to BMP 103 or contact a member of FMSI Environmental Services-**Date:10/4/2022 Revision: 0**
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BMP 106 Acid Plant

FMSI Acid Plant

It is important that the FMSI Acid Plant operates within compliance for emissions limits. This will prevent excessive amounts of sulfur dioxide, acid mists, and nitrogen oxide from being discharged into the atmosphere and maintain compliance with the emissions standards. Additionally, this will prevent exceedances of opacity levels and maintain compliance. FMSI will accomplish these goals through diligent use of practical methods, equipment, procedures, and development of new technologies.

Emissions Limits and Standards

Discharge to the atmosphere of gases containing the following are not permitted when:

- **Sulfur Dioxide:** gases contain in excess of 4 lbs of sulfur dioxide per ton of acid produced being expressed as 100% H₂SO₄; Sulfur dioxide in excess of 100 lbs per hour on a rolling 24-hour averaging period; Sulfur dioxide in excess of 90 tons per year in any rolling 12-month averaging period.
- **Acid Mist:** Gases containing sulfuric acid mist in excess of 0.15 lbs per ton of acid produced, the production being expressed as 100% sulfuric acid.
- **Nitrogen Oxide:** Nitrogen oxide is present in excess of 14.0 lbs per hour; Nitrogen oxide in excess of 43.8 tons/year on a rolling 12-month averaging period.
- **Opacity:** Discharges to the atmosphere of any gases that exhibit 10% opacity or greater are not permitted (opacity limit does **NOT** apply during start up, shutdown, or malfunctions).

Air Pollution Control Requirements for Sulfur Dioxide

At all times, including periods of start-up, shutdown, or malfunction, a caustic scrubber must be maintained and operated in a manner consistent with good air pollution control practices for minimizing SO₂.

Monitoring, Recordkeeping, and Reporting

Opacity: Environmental Services certified Method 9 observer will conduct necessary observations and periodic opacity monitoring as required by the air permit

CMSE & Flow Measurement Sensor: A CEMS for measuring SO₂, O₂, and NO_x will be used, calibrated, maintained, and operated in accordance with the Safford Air Permit. FMSI shall also calibrate, maintain, and operate a flow measurement sensor to measure the volumetric flow rate of the main acid plant stack.

Excess Emissions Reporting

Any emissions limit exceedance or suspected exceedance should be reported to Environmental Services immediately. Environmental will evaluate the event and after consultation with corporate management and legal counsel, will report the event to ADEQ if necessary. The 24-hour and 72-hour report will be the Environmental Services responsibility, with support from the Hydromet Division (Acid Plant).

Testing Requirements

Environmental Services will coordinate with the Hydromet Division (Acid Plant) on annual compliance/performance testing requirements in accordance with Safford's Air Quality Permit.

Refer to Safford Air Permit for detailed monitoring, recordkeeping, and reporting requirements



Need additional information?

Refer to BMP 106 or contact a member of FMSI Environmental Services-**Date:3/11/2024 Revision: 0**
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BMP 107 Dust Management Summary

Managing dust emissions on-site

Arizona Administrative Code R18-2-605 states that an operator must take “reasonable precautions to prevent excessive particulate matter from becoming airborne”. FMSI’s goal to keep the operating divisions within compliance standards of no greater than 40% opacity is met by using water and/or other reasonable methods. The following guidelines outline how dust is managed, per FMSI’s Class II Air Quality Control Permit.



How can we mitigate excessive dust?

Precautions for haul roads/roadways, laydown yards, and parking lots identified in FMSI’s Dust Control Plan include the following:

- Application of water or wetting agents
- Controlling vehicle access/speed
- Dust suppressants
- Inherent and residual moisture content
- Wet sweeping
- Vacuuming
- Compaction
- Enclosures
- Other good modern practices



Main Areas of Concern

- Haulage and secondary access roads
- Stockpiles
- Crush convey operations
- Road and yard maintenance

Supervisor and Operator Responsibilities

- Utilization of precautions, dust control training requirements, address dust concerns, obey speed limits, following BMP’s, communicate excessive dust to supervision or environmental



Need additional information?

Refer to BMP 107 or contact a member of FMSI Environmental Services-*Date:7/17/2021 Revision: 0*
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BMP 108 Dust Management – Crush and Convey

Why do we Manage Dust?

Dust must be managed properly to ensure compliance with Safford's air quality permit. FMSI's goals are to keep the Crush & Convey Division within compliance standards using baghouses, water sprays, and other reasonable methods. FMSI will accomplish these goals through diligent use of practical methods, equipment, procedures, responsibilities, accountabilities, and training.

FMSI's Class II Air Quality Permit

The Class II Air Quality Permit issued by the Arizona Department of Environmental Quality (ADEQ) states that at all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, utilize wet suppression to minimize particulate matter emissions and comply with the applicable emission limitations and standards.

Dust must be managed properly in order to ensure compliance with Safford's air quality permit.

Water sprayers must be in operation at all times unless:

- A natural condition (i.e., rain) adequately suppresses the dust
- No product being handled
- Maintenance is being performed



Responsibilities

- Any emission source that is above the permitted opacity will require the active area supervisor to respond immediately to the dust concern, determine and implement corrective action needed to minimize the dust concern, and report the concern and action taken to Environmental Services.
- If water sprays or other actions do not adequately reduce the dust below the limits set in the permit, contact Environmental Services immediately. If necessary, Environmental will conduct an EPA Method 9 opacity observation and, depending on the results, a notification to the state may be required.
- Operators are responsible to follow and comply with this BMP at all times and are accountable for notifying and communicating with respective supervisors of any non-compliance concerns, i.e., non-function or disabled pollution control equipment and/or water sprays.

What is the Control Plan for Dust Management?

- Under wet weather conditions or inherent moisture of material, allow natural conditions to maintain dust control until necessary to use water spray control methods at the truck unloading/dump pocket.
- Baghouses will be in operation at all times except during periods when no product is being handled by the system or the system is down for maintenance and repairs.
- Use dust suppression system, water additives, agglomeration, and/or other reasonable methods if necessary to maintain adequate dust control measures.
- If the system cannot control the dust emission to the permitted limits, temporarily shut down the equipment and notify the Environmental Services Department when practicable, but no later than the end of the shift.

Should I Report Immediately?

Yes! Civil and criminal penalties can be enforced against anyone who knowingly violates the established permit limits, unless the violation is promptly reported. Therefore, it is better to promptly contact Environmental Services as these issues arise.

Need additional information?

Refer to BMP 108 or contact a member of FMSI Environmental Services - **Date: 6/12/2024 Revision: 0**
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BMP 109 Refrigerant Management Summary

Why Do We Manage Refrigerants?

Refrigerants are substances used in heating, ventilation, air conditioning units (HVAC), other air conditioners (motor vehicle, window), appliances, soda machines, and transformer dielectric fluid that may or may not contain ozone-depleting substances. **The Federal Government has established standards to eliminate the release of refrigerants into the atmosphere.**



Which refrigerants are used on-site?

- R22, 134a, 410a, and 407c.
 - R22 is being phased out

Requirements for refrigerant equipment?

- Technicians are required to be familiar with standards outlined in **40 CFR 82**
- Equipment must comply with all applicable federal, state, and local requirements
- Refer to **BMP 109** for full reqs. and **BMP 301** for HVAC units with asbestos

Purchasing and Disposal of Refrigerants

- Must be sent to environmental services
 - Purchase records (date, quantity, type, supplier), location of unit
- Units must be delivered to Environmental Yard for disposal
 - Certified technician will remove, and label disposed unit

Leak Repairs?

- Leaks must be repaired within 30 days for refrigerant appliances containing more than 50 pounds of charge
- Contact Environmental Services if leak cannot be repaired in 30 days



Certifications

- Refrigerant unit operators must have training/cert. by programs approved by ADEQ or USEPA

Need additional information?

Refer to BMP 109 & BMP 301 or contact a member of FMSI Environmental Services-*Date:9/22/2021 Revision: 0*
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BMP 111 Fugitive Dust Management Summary

Dust management is everyone's responsibility!

Fugitive dust from mining activities, unpaved roadways, disturbed areas, stockpiles is managed by FMSI team members through the Visible Emission Observation Plan, Dust Control plan and with accordance to FMSI's Air Quality Permit.



What is fugitive dust?

- Fugitive dust is dust which has no definable point source

Where does it come from?

- Fugitive sources included mining activities, unpaved roadways, open areas, dry washes, and storage piles



What is opacity?

- Safford's Class II Air Quality for fugitive dust sources is 40% opacity limit
 - Measurement quantifying the density of particulate matter (dust) in the air considering how much light is obscured
 - Amount of visibility blocked by plume

Reasonable Precautions

- Application of water and dust suppressant, speed control, gravel, paving, minimizing drop height, optimizing blast pattern, residual moisture content, etc.

Supervisor and Operator Responsibilities

- Utilization of precautions, dust control training requirements, address dust concerns, obey speed limits, communicate excessive dust to environmental

Additional resources

- BMP #111 Fugitive Dust management, FMSI Dust Control Plan, FMSI Visual Observation Plan, Environmental Services



Need additional information?

Refer to BMP 111 & or contact a member of FMSI Environmental Services-*Date:6/17/2021 Revision: 0*
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BMP 112 Acid Mists and Tankhouse

What is Sulfuric Acid Mist?

Acid mist is generated in electrowinning tankhouse when oxygen bubbles, which are formed during electroplating, burst at the surface of the electrolyte. When these bubbles burst, they cause the small droplets of electrolyte containing sulfuric acid to become airborne. These airborne particles are sulfuric acid mist. Sulfuric acid is corrosive and can cause severe irritation or corrosive damage if inhaled.



Best Practices to Control Acid Mist

- **Surfactants:** these reduce the surface tension of the electrolyte in the tankhouse. Reduction in the surface tension causes fewer acid mist droplets to form when the oxygen bubbles burst at the surface
- **Thermal Retention Balls:** Heat retention balls are small plastic balls that float on the surface of the electrolyte in each electrowinning cell. These heat retention balls help prevent acid mist droplets from becoming airborne when oxygen bubbles burst at the surface of the cells.

How do I control Acid Mist at the Tankhouse?

In order to manage the acid mists, the following procedures for each best practice must be followed:

- Surfactants should be added to the electrolyte at each tankhouse daily per the plant operating procedures. The procedures may vary based on conditions, the employee shall contact the area supervisor for questions toward ensuring the surfactant levels are controlled in a way to prevent foaming and other upsets in the tankhouse and/or SX plant.
- FMSI's operating procedures addresses management practices for maintaining heat retention balls at the tankhouse. The employee will ensure the tankhouse has the required heat retention ball coverage for the operation shift and maintain the necessary balls for the cells. If there are questions, the employee shall contact the area supervisor for procedures.

How do I control Acid Mist at the Mixer Settler Tanks?

In order to manage the acid mists, the following procedures for each best practice must be followed:

- The mixer settlers must use covers to control acid mists. Covers were installed as a design of the mixer settler tanks.
- The inspection doors must be closed at all times except during maintenance, repairs, and general operations requiring access to the interior of the mixer settler tanks.

See BMP 112 for specifics on FMSI's Air Quality Permit No. 90069

Need additional information?

Refer to BMP 112 or contact a member of FMSI Environmental Services-*Date:10/4/2022 Revision: 0*
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BMP 114 Sand and Abrasive Blasting

What is Abrasive Blasting?

Abrasive blasting is used for a variety of surface cleaning and texturing operations, mostly involving metallic target materials. Abrasive blasting systems typically include 3 basic components: an abrasive container, a propelling device, and an abrasive blasting nozzle(s).



Types of Abrasive Blasting Media

Abrasive materials used in blasting can generally be classified as sand, slag, metallic shot or grit, synthetic, or other. Sand has a rather high breakdown rate, which can result in substantial dust generation. Slags have the advantage of low silica content, but have been documented to release other contaminants, including hazardous air pollutants (HAPs), into the air. Metallic abrasives include cast iron shot, cast iron grit, and steel shot. Synthetic abrasives, such as silicon carbide and aluminium oxide, are becoming popular substitutes for sand. These abrasives are more durable and create less dust than sand. Other abrasives include mineral abrasives (such as garnet, olivine, and staurolite), cut plastic, glass beads, crushed glass, and nutshells. As with metallic and synthetic abrasives, these abrasives are generally used in operations where the material is reclaimed. Mineral abrasives are reported to create significantly less dust than sand and slag abrasives.

Controls

- Prior to any abrasive blasting, an MOC will be completed
- Several different methods have been used to control the emissions from abrasive blasting such as blast enclosures, vacuum blasters, drapes, water curtains, wet blasting and reclaim systems.
- Wet blasting controls include not only traditional wet blasting processes, but also high-pressure wet blasting, high pressure water and abrasive blasting, and air and water abrasive blasting

Specific requirements FMSI must follow

- All sand and abrasive blasting projects must be approved through Environmental Services prior to the start of the project
- Safford operations must minimize dust emissions to the atmosphere using good modern practices. At least one of the following methods must be implemented:
 - 1) Wet blasting
 - 2) Effective enclosures with necessary dust collecting equipment
- Safford operations cannot allow emissions from sandblast or other abrasive blasting operations to exceed 20% opacity.

Recordkeeping Requirements

- Each time an abrasive blasting project is conducted, FMSI needs to make a record of the following:
 - (a) The date the project was conducted;
 - (b) The duration of the project; and
 - (c) Type of control measures employed.

Need additional information?

Refer to BMP 114 or contact a member of FMSI Environmental Services-*Date:10/4/2022 Revision: 0*
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BMP 115 Mobile Equipment Summary

What is Mobile Equipment?

Mobile equipment is defined as any equipment that combusts fuel to perform a task and is generally considered portable such as trailer, skid mounted, and hand portable equipment. **Important measures must be followed when using fuel combusting mobile equipment.**



How do I know if I work with Mobile Equipment?

- **Examples of mobile equipment on-site include but are not limited to the following**
 - Generators
 - Welders
 - Pumps
 - Pressure Washers
- **The following are not included as mobile equipment.**
 - Equipment that does not combust fuel (electric shop welder)
 - Equipment that combusts fuel to provide motive power (haul truck)

Mobile Equipment Procedures

- Non-stationary (<12 months in the same location) Mobile Equipment is exempt from inclusion in Safford's air quality permit
- Moving equipment for periodic maintenance or moving a piece of equipment and replacing it with similar equipment does not restart the 12-month time limit
- If fuel combusting equipment is needed and will be stationary for more than 12 months, contact Environmental Services
- All personnel shall receive awareness (or site specific) training on Mobile Equipment provided by supervisors and/or tailgate lead



Need additional information?

Refer to BMP 115 or contact a member of FMSI Environmental Services-**Date:9/22/2021 Revision: 0**
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BMP 116 Mobile Source Inventory

What is Mobile Source of Air Pollution?

Any reciprocating internal combustion engine (RICE) are considered mobile if they have a means of being transported (has wheels, skids, carrying handles, dolly, trailer, etc.). These include such equipment as pumps, compressors, and generators.



Freeport - McMoRan's Concern

- These pieces of equipment are **not** subjected to National Emissions Standards for Hazardous Air Pollutants (NESHAP) or New Source Performance Standards (NSPS) as long as they are not in one location for more than 12 months at one time.
- If this 12-month timeframe is exceeded, the source is considered stationary and is therefore subjected to the RICE NESHAP and NSPS standards and permitting.



What can I do to make sure that this equipment is not subjected to the RICE NESHAP and NSPS STANDARDS and PERMITTING?

- All site divisions are responsible to track their portable equipment
- Sites should focus on the movement of pumps, compressors, and generators throughout the mine
- Equipment must be moved for legitimate use at least one time in a 12-month time period
- Equipment maintenance is **not** considered a legitimate use
- Contact Environmental Services for questions

Will portable equipment movement be tracked?

All portable equipment of interest relies on the work order system for tracking purposes. Rental equipment applicable to the BMP is also tracked through the accounting department.

Need additional information?

Refer to BMP 116 or contact a member of FMSI Environmental Services-*Date:10/4/2022 Revision: 0*
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BMP 201 Facility Heap Leach Pad Management

Purpose: Based on the APP permit requirements FMSI's goals are to keep the Heap Leach Pad and Lone Star Heap Leach Facility within compliance standards, using proper training inspections and the Management of Change Process. These goals will aid in preventing accidental line damage, discharging event, overtopping or accidental discharge outside of the Heap Leach Pad, and/or Lone Star Leach Facility, containment. FMSI is committed to operating as an environmentally responsible producer of quality copper and other mineral by-products.



Quarterly Heap Leach Pad Monitoring

As stipulated under the APP Permit, FMSI is directed to conduct the following activities.

- Heap deformations, including surface cracks, sloughs, or unusual settling that affect slope stability.
- Check for seepage along perimeter berm.
- Look for visible liner tears, punctures, cracks, deformities, or other damage due to sunlight, wind, weather, debris, vegetation, animals, or other adverse conditions.
- Impairment of access around leach pad.
- Excessive erosion or accumulation of debris or blockages in conveyances and diversions.
- Accumulation of debris in leach pad solution conveyance channels causing flow restrictions.



In addition, ADEQ requests: a signed copy of the permit shall be maintained at the location; a log book of inspections and measurements shall be maintained at the location; and the log book retained for ten years made available to ADEQ upon request.

Accountability

Any discharge from outside of the Heap Leach Pad Containment or the Lone Star Heap Leach Pad Facility will require area supervisor to respond immediately to the concern, determine and implement the corrective action needed to minimize discharge, and report the concern and corrective action taken to the Environmental Services via phone within 15 minutes of becoming aware of the problem. The report should include:

- A brief summary of the concern
- The date, time, and location of the concern
- A brief summary of the corrective action taken
- The time of implementation

Any disciplinary action, if deemed necessary, will follow progressive discipline and guidelines set forth by the Guiding Principles.

Need additional information?

Refer to BMP 201 or contact a member of FMSI Environmental Services-*Date:3/13/2023 Revision: 0*
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BMP 203 Wash Rack Guidance Summary

What is a wash rack?

A wash rack is used to clean mine equipment, vehicles, and other mobile equipment (BMP 115) of mud and soils, improving overall performance.

Improper management of wash racks could lead to a discharge to surface or groundwater. Adherence to BMP 203 ensures compliance with Aquifer Protection Permit No. APP – 100534 administered through the Arizona Department of Environmental Quality (ADEQ)



Where are wash racks located?

- **Safford Mine Truck Wash Rack**
 - West of Heavy-Duty Truck Shop at Site 1
- **Safford Mine Wheel Wash Rack**
 - ½ mile north of Main Security Gate off main entrance road to Safford mine

Washing Procedures

- Large equipment/trucks should be washed manually with high pressure sprayers
- Wheel wash facility operates automatically with sensor triggering deployment of pressurized water
- **Vehicles/Mobile equipment should not be washed in any areas other than the permitted wash racks (above) without prior approval from Environmental Services**
 - Such a request requires permitting and approval through ADEQ

Wash Rack Maintenance:

- Ensure oil absorbent socks are in good condition and visually inspect each sump monthly
- Repair damages to wash pads and remove accumulated sediments from sump as necessary
- Use biodegradable soaps approved by Environmental Services, Safety, and SX ops.
 - Refer to SDS database, or contact Environmental Services for guidance

Grease/Oil contaminated items

- Contaminated materials must be scraped and wiped prior to wash rack usage
 - **BMP 308 – Used Grease Management**
 - **BMP 316 – Used Absorbents/Rags**
 - **BMP 323 Contaminated Soils**

Wash Rack Sump Cleaning

- **Contact Environmental Services prior to cleaning out any wash rack sump**



Need additional information?

Refer to BMP 203 or contact a member of FMSI Environmental Services-*Date:8/19/2021 Revision: 0*
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BMP 207 Pressure Washers and Steam Cleaners

WHAT ARE PRESSURE WASHERS AND STEAM CLEANERS?

Pressure washers and steam cleaners are used at FMSI to wash vehicles, equipment, parts, floors etc.

The improper management of these washers could lead to an un-permitted discharge to surface or groundwater. In order to prevent un-permitted discharges to surface or groundwater, facilities must be designed to meet the Best Available Demonstrated Control Technology (BADCT) and must be considered in the APP permitting process.

What can be power washed?

Where can it be washed?

- **Vehicles and Mobile Equipment**
 - Heavy Duty Truck Shop Wash Rack
 - Small Vehicle Wash Rack
- **Leaching Equipment**
 - Only can be washed on the leach pad and you can only wash process solutions (no grease or oils)
- **SX/EW Process Solutions**
 - Washing the tankhouse and tankfarm floors
- **Cathode and Anode Washing**
 - Wash in tankhouses
- **Dirt and Mud from Buildings**
 - Only applicable to buildings that only contain uncontaminated water
- **Power Line Insulators**
 - On Power Line structures
- **Other Environmental Services approved activities.**



Do not pressure/steam wash:

- **Any material other than dirt and mud from equipment including, but not limited to:**
 - Raffinate
 - Pregnant Leach Solution
 - Electrolyte
 - Organic

Odds and Ends

- **What about items contaminated with oils, grease and/or process residues that are too large to take to a washrack, or just can't be moved because they are permanently installed?**
- **Cleaning agents used in either steam cleaners or pressure washers must be non-hazardous (i.e. biodegradable). Refer to the FMSI SDS Database or contact Environmental Services for a list of approved cleaning agents.**



Need additional information?

Refer to BMP 203 or contact a member of FMSI Environmental Services-*Date:8/19/2021 Revision: 0*
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BMP 210 Sump & Underground Storage Tank Management

WHAT IS THE DIFFERENCE BETWEEN A SUMP AND AN UNDERGROUND STORAGE TANK?

A **sump** is a low space that collects liquids such as oils, or process solutions and manages them in a manner to ensure that the containment is not regulated as an underground storage tank (UST). Examples of a sump are underground vaults, catch basins, and containments.

An **underground storage tank** is any underground tank, sump, vault, etc, that is used to accumulate substances that has more than 10% of its contents located beneath the ground surface that exceeds 110 gallons in capacity.

Safford maintains an inventory of site facilities and has determined which are exempt from UST regulations and considered a sump. Currently there are no designated USTs onsite.

What are the requirements of a sump?

- Sumps must be constructed of a material that is impervious to the solutions being collected.
- Sumps must be maintained to ensure they are in good working order
- Sumps must have a capacity of less than 110 gallons to be part of the sump exemption
- Sumps that are part of secondary containment systems must be kept empty except during periods of upsets and or emergencies
- Sumps that collect process solutions or spills must be visually inspected on a daily basis. Sumps used to collect stormwater are exempt from this requirement.
- Each department with sumps in their operating areas must inspect all sumps periodically. This includes checking for cracks and structural integrity. Any issues found on these inspections must be fixed and documented.



Example of sump with solution

Reminder

Changes to existing sumps or construction of additional sumps must be approved through the Management of Change process. Refer to BMP 902 for additional information



Need additional information?

Refer to BMP 210 or contact a member of FMSI Environmental Services-*Date:6/20/2022 Revision: 0*
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BMP 211 Sediment Control/Management Summary

Why does sediment need to be controlled?

Soil loss/erosion causes sediment deposition, resulting in turbidity and soil nutrients in waterways. This promotes algae blooms and reduces the oxygen content of water.

Erosion and soil loss to Waters of the U.S may create conditions violating a surface water quality standard set forth in Arizona Admin. Code Title 18, Ch. 11. Per FMSI's Stormwater Pollution Prevention Plan (SWPPP), steps must be taken to limit sediment pollution.



What devices are used to control/manage sediment?

- Sediment wattles
- Rock check dams
- Rip-rap
- Hay bales
- Silt fencing
- Gabion cages

When should sediment be controlled and how are devices installed?

- Sediment control devices should be used where water is likely to flow off site to local ephemeral drainages where soil is unstable, or vegetation is unable to deter erosion
 - Source of stormwater flow (with potential for erosion/soil loss) should be considered
- Sediment wattles should be installed per Arizona Department of Transportation (ADOT) requirements found on the Safford environmental SharePoint site
 - **Wattles should be placed in 4-6-inch-deep trench perpendicular to flow of water, adhering to necessary Blue Stake requirements and ADOT spacing intervals**
 - Wattles needed in a line should be placed tightly end to end without overlap
 - Repair/replace wattles when damaged/cut, or no longer providing sediment control

Employee Training

- All personnel shall receive training or, at the least, have access to BMP 211 when dealing with sediment control on FMSI property
- Training will be provided by supervisors and/or Team Environmental Coordinator
- Other sediment control device installation parameters can be found within **BMP 211 – Sediment Control/Management**



Need additional information?

Refer to BMP 211 or contact a member of FMSI Environmental Services–**Date:8/6/2021 Revision: 0**
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BMP 212 Breach of Potable Water Lines

What is Potable Water?

Potable water is water that has been treated and approved for humans to drink. Line breaks on drinking water may result in potable water outage and can create the potential for cross-contamination of the potable water supply should contaminant or debris be siphoned back into the distribution line.

General Requirements

Prior to any depressurization, evaluate the line break and gather information.

- Identify all areas of distribution affected, as well as all valves and locations to control flow.
- Identify all areas that may be affected by lack of water supply and notify them. Pay special attention to affected areas with firewater facilities, eyewash stations, or safety showers.
- Identify potential contaminants and prepare work area to eliminate contamination. If soil or water, or both, submerge the break, try to maintain positive pressure in the system until the break location can be excavated and/or dewatered through trenching or pumping to expose the break and prevent back-siphonage of contaminants into the system. Once the break is exposed, evaluate potential repair methods.
- **Notify Safford Environmental Services** any time a potable line is breached or if there are questions/issues encountered during the repair procedure.
- Determine the type of repair required and what equipment/parts are needed.
 - Can it be repaired with disinfection clamp (or other devices) without depressurizing the line?
 - If depressurization is necessary, can it be done in a controlled, sanitary manner?
 - Has total pressure loss already occurred, or is there a known source of contamination/cause for concern?



DISINFECTION PROCEDURES WHEN CUTTING INTO OR REPAIRING EXISTING MAINS

- **Trench Treatment:** When existing main is opened, liberal quantities of hypochlorite will lessen the damage from pollution. (Will be completed by an **Approved Environmental Services Contractor**)
- **Swabbing with Hypochlorite Solution:** The interior of all pipe and fittings (particularly couplings and sleeves) used in making the repair shall be swabbed or sprayed with a 1 percent hypochlorite solution before they are installed. (Will be completed by an **Approved Environmental Services Contractor**)
- **Flushing:** Most practical method for removing contaminants. If valve and hydrant locations permit, flushing toward the work location from both directions is recommended. Flushing shall be started as soon as the repairs are completed and shall be continued until discoloured water is eliminated.
- **Slug Chlorination:** When practical, in addition to the procedures above, the section of main in which the break is located shall be isolated, all service connections shut off, and the section flushed and chlorinated as described in sec. 10.3, except that the dose may be increased to as much as 300 mg/l and the contact time reduced to as little as 15 min. After chlorination, flushing shall be resumed and continued until discolored water is eliminated, and the water is free of noticeable chlorine odor.
- **Sampling:** A chlorine residual sample shall be collected by either a FMSI employee or the approved Environmental Services Contractor at the furthest possible service connection. Once chlorination is completed approval has been given by Environmental Services or Approved Contractor, notify all affected areas that service has been restored.
- **Bacteriological Testing Requirements:** If depressurization is needed, bacteriological testing is required.



Need additional information?

Refer to BMP 212 or contact a member of FMSI Environmental Services-*Date:3/26/2024 Revision: 0*
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BMP 301 Renovation-Demolition Notification Summary

What is Renovation and Demolition?

Renovation is the altering of a facility, or one or more facility components, in any way. Demolition is the wrecking or taking out of any load-supporting structural member of a facility, together with any related handling operations.



Requirements prior to either renovation or demolition

- Notify environmental services at least thirty days before work is scheduled to begin
- Requestor must submit a MOC, including detailed scope of work
- Project area will be inspected for Asbestos Containing Materials (ACM) and if necessary sampled
- ADEQ must be notified at least 10 working days prior to any renovation activities involving asbestos or any demolition activities begin
- Work must start and end on the day specified on the notification
- If there are any changes to project, scope or schedule, notify environmental services

Renovation Activities

- Relocation of walls, installation of windows or doors in existing walls, removal of segments of transite pipe, modification of HVAC systems, upgrading lighting, and other modification to buildings or structures

Demolition Activities

- Building dismantling, concrete structure removal, removal of entire transite pipelines, and any other major project requiring the removal or relocation of buildings or structures.



Employee Training

- Asbestos Awareness Training course is available through the Training Department

Certifications

- Project inspections and sampling must be conducted by a certified AHERA Building Inspector.

Need additional information?

Refer to BMP 301 & BMP 902 or contact a member of FMSI Environmental Services-*Date:3/23/2022 Revision: 0*
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BMP 302 Used Solvent Storage

What is Used Solvent?

Used solvent is any product that has been used in the activity of cleaning/degreasing parts and/or materials. Used solvents need to be sampled and analysed to ensure that certain contaminants are not present in the spent material and subject to the hazardous waste regulations.



How do I know if my used solvent is hazardous waste?

- Contact Environmental Services for determination.
- Environmental Services will notify once the used solvent is determined to be hazardous or non-hazardous
- If used solvent is hazardous, Environmental Services will coordinate installation and set up a satellite accumulation area

What do I do if I Generate Non-hazardous Used Solvent?

- Store the used solvent in a steel 55-gallon closed top drum with the words "Used Solvent" clearly labelled on the side of the container
- Follow the drum/container management guidelines in **BMP 313 – Drum/Container Management** and **BMP 328 – Satellite Accumulation Area**

What do I do if I Generate Hazardous Used Solvent?

- Follow the drum/container management guidelines in **BMP 313 – Drum/Container Management** and **BMP 328 – Satellite Accumulation Area**
- Environmental Services will assist in setting up the appropriate Hazardous Waste Central Accumulation area drum to store the Hazardous Waste Solvent

If you feel you need more than a 55-gallon drum for the satellite accumulation area, contact Environmental Services. Personnel in the department shall evaluate the situation on a case-by-case basis and provide solutions and/or alternatives to the storage of used solvents.

Need additional information?

Refer to BMP 302 or contact a member of FMSI Environmental Services–*Date:3/14/2023 Revision: 0*
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BMP 303 Hazardous Waste Paints

What is a Non-Latex/Water Based Paint/Coating?

Non-Latex/ Water Based Paints and Coatings are paints that cannot be washed or thinned using water, contain a listed hazardous waste, and/or exhibit a hazardous waste characteristic (i.e., ignitable). Non-latex/water-based paints, coatings and related materials can include, but are not limited to, epoxy paints, resins, varnishes, oil-based paints, paint thinners and thinner sludge.



What to do if I perform a paint related project?

- Only paint related materials approved through the SDS system shall be used
- Non-latex/water-based paints shall not be used other than by designated contractors/personnel
- Must minimize waste generated, reduce toxic chemicals on site, and reduce costs associated with hazardous waste disposal
- All employees who perform painting activities that generate waste paint or related materials must have annual environmental awareness training
- For additional requirements pertaining to spray painting, please refer to **BMP 100 – Spray Painting**

How do I manage hazardous waste paint and related materials?

- Waste paint must be managed in a satellite accumulation area (see **BMP 328- Satellite Accumulation Area**) which must be labelled with words “Satellite Accumulation Area”
- Waste paint and all associated debris must be placed into a 55-gallon drum and labelled “Hazardous Waste”, “Waste Paint Debris”
- Open paint cans **are not** permitted to be stores outside or inside to dry the excess paint before disposing of the can
- No paint applicators (brushes, rollers) and trays shall be left uncovered for the purpose of air drying. If applicator or tray cannot be reused, dispose of it in “Waste Pain Debris” Satellite Accumulation Area
- No paint containers should be left open for extended periods of time, especially over night
- All paint should be used on project which it was intended. Excess paint with a shelf life that will not be used should be returned to vendor
- Excess paint not kept on the shelf should be placed in the “Waste Paint Debris” container. If possible, the empty can should be scraped out utilizing a spatula or other tool into the hazardous waste paint container. No paint should ever be sprayed or poured on the ground
 - Spilled paints or thinners should immediately be picked up and placed in “Waste Paint Debris” container. Environmental Services must be notified. (**BMP 400- Environmental Incident Notification**)

- Users are responsible for ensuring used, leftover, or obsolete paint are managed correctly during use, storage, and disposal.
- Painting activities should only be carried out by designated personnel/contractors approved by the Environmental Services Department. If you find waste paint in a shop area, contact Environmental Services personnel for proper disposal guidance.



Need additional information?

Refer to BMP 303 or contact a member of FMSI Environmental Services-*Date:6/5/2023 Revision: 0*
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BMP 305 Lead Flake and Spent Anode Management

Purpose of Lead Flake Management

This standard operating procedure is to ensure compliance with U.S. Department of Transportation (DOT) hazardous materials shipping requirements. Freeport personnel responsible for the on-site management, packing, marking, labelling, and transportation of lead flake will follow the guidelines in this document.

Procedure

- Freeport personnel responsible for the on-site management, packaging, marking, labelling and transportation of lead flake must have current DOT and Hazard Communication training.
- The Hydromet Department shall develop, implement, and incorporate into their site-specific SOP a procedure to ensure lead flake is properly drained of all free liquid prior to shipment. When the lead flake has approximately 3% moisture or less, it is deemed ready to ship.
- Lead Flake must be placed in a DOT-approved container and marked/labelled per the DOT requirements prior to shipment. The weight of the lead flake must not exceed the weight for which the container was rated.
- Approved containers are included in the list below, additional containers may be added to the BMP with the approval of the FCX DOT Department and the Manager, Waste Programs:

Bulk Packaging	EnviroServe Roll-Off Container with a plastic liner
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- Approved container marking and labelling include:
 1. The container must be marked with the **Proper Shipping Name: RQ, UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (contains sulfuric acid, lead), 8, PGII (lead)**
 2. The container must be labelled with the appropriate DOT label: (Class 8 corrosive liquid) placed near the DOT Proper Shipping Name. The Class 8 label must be at least 100 mm (3.9 inches) on each side with each side having a solid line inner border 5.0 to 6.3 mm (0.2 to 0.25 inches) from the edge.
- The container must be in good condition. Any damaged container (leaking, punctured, cracked, etc) must be either over-packed or repacked in a new approved container. The container must be closed with the lid securely fastened and tight.
- All lead flake containers must be visually inspected prior to shipment to ensure the container is in good condition and properly closed or covered, the container weight limitations are within specifications, moisture content is approximately 3%, and there is no free-flowing liquid. If any container does not meet these criteria, the container must be immediately corrected prior to shipping the lead flake off-site.
- Prior to shipment, a Bill of Lading (BOL) must be completed with the appropriate DOT shipping name. In addition, the BOL must meet the requirements of 49 C.F.R. Part 172, Subpart C.

Records Management

All related records are to be maintained by the Hydromet Department in accordance with Freeport-McMoRan's record retention policy.



Need additional information?

Refer to BMP 305 or contact a member of FMSI Environmental Services—**Date:8/19/2024 Revision: 0**
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BMP 306 Solid Waste Management Summary

What is Solid Waste?

Solid waste is any garbage, refuse, sludge from waste treatment plant, potable water treatment plant, air pollution control facility or any other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operation, and from community activities.



Who collects waste and recycled materials?

Solid Waste

- Bins are set-up for weekly pick-up through FMSI contract with solid waste collection company
- All Garbage bins must be emptied at least every 90 days
- All waste storage/staging piles must be removed within 90 days of creation

Recyclable Materials

- Separate dumpsters may be used for accumulation of recyclable materials provided they are plainly marked as such
 - **Do not mark directly on garbage bins, same bins are not returned to location when emptied**



What materials should not be deposited in garbage dumpsters?

- **Pallets, wooden crates, and other wood/debris** (BMP 336 – Scrap wood, BMP 335 – Used railroad tires/Power Poles, and BMP 101 – Open Burning)
- **Scrap metal – including iron, steel, copper, aluminium, stainless steel, brass, spent welding rod, etc.** (BMP 320 – Scrap Metal Management)
- **Aerosol cans** (BMP 325 – Aerosol Can Management)
- **Used Tires** (BMP 327 – Waste Tires)
- **Batteries** (BMP 326 – Used Batteries)
- **Drums** (BMP 313 – Drum/Container Management)
- **HDPE/LDPE** (BMP 338 – HDPE/LPE Recycling)
- **Paints** (BMP 303 – Waste Paint)
- **Used Oil** (BMP 310 – Used Oil Management)
- **Other Free-Flowing Liquids**
 - Call FMSI Environmental Services for specific guidance
- **Fluorescent and Mercury Containing Lamps** (BMP 332 0 Fluorescent and Mercury Containing Lamp management)
- **E-waste**
 - Must be taken to MIS trailer at Site 2 for disposal
- **Other Items**
 - If unsure of how to manage a waste product, please call Environmental Services for assistance

Need additional information?

Refer to BMP 306 or contact a member of FMSI Environmental Services–*Date:8/3/2021 Revision: 0*
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BMP 308 Used Grease Management Summary

What is used grease? Used grease is any grease that has been refined from crude oil, synthetic grease, or biodegradable grease, which has been used and is contaminated by physical or chemical impurities.

What do I do with used grease? Used grease should be packed in **clean** and **undamaged** steel 55-gallon drum or 5-gallon bucket suitable for transportation.



- Each container must be labelled with the words “Used Oil - Used Grease”.
- Grease container lids must always be properly closed and tightened to prevent contamination by water and dirt.
- When the grease containers are full, the department should transport the containers to the designated storage area at the Site 1 Environmental Yard.
- Drums and buckets must be clean before being dropped off at the Environmental Yard. Disposal company drivers can reject dirty drums resulting in untimely disposal and extra cost.

Why is grease management important?

If grease is mixed with materials other than grease, there is a potential that the grease will need to be managed as a regulated hazardous waste, disposal costs ranging between \$400 - \$500 per 55-gallon drum. On the other hand, “good” used grease can be recycled for a cost of approximately \$100 per drum.



Need additional information?

Refer to BMP 308 or contact a member of FMSI

Environmental Services



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Revision: 0
Date: 6/15/21

BMP 309 Oil-Filled Electronic Devices

What are oil-filled electrical devices?

An oil-filled electrical device is any electrical equipment containing oil, including, but not limited to: transformers, capacitors, oil circuit breakers (OCBs), resistors, ballasts, and reclosures. These electrical devices may contain Polychlorinated Biphenyls (PCBs), which is a dangerous chlorinated hydrocarbon and should be handled with care. If PCBs are released into the environment through improper disposal or leakage from an oil-filled electrical device, they take several decades to decompose.



What if I need to relocate a transformer?

- Complete a Transformer Inventory Sheet and submit the completed form to Plant Engineering. They will then update the transformer database.

What if I have a new Transformer?

- Complete a Transformer Inventory Sheet and submit the completed form to Plant Engineering. They will then update the transformer database.
- Oil samples will be taken on new, used, or inter-branched transformers and the Line Crew will determine what analyses will be performed.
- Transformer will then be tagged and labelled.

What if I want to salvage/dispose of a transformer or an open/closed oil-filled electrical device?

- Provide all transformer information to Environmental Services and the records will be checked.
- Transformer will then be taken to the Environmental Yard along with analytical data.
- Analytical data will determine how it will be handled.

What if I have a new opened or closed oil-filled electrical device?

- Oil samples will be provided by supplier and FMSI Line Crew will determine analyses to be performed on oil sample.



Need additional information?

Refer to BMP 309 or contact a member of FMSI Environmental Services—*Date:6/13/2023 Revision: 0*
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BMP 310 Used Oil Management Summary

What is used oil? Used oil is defined as " any oil that has been refined from crude oil, or any synthetic oil, which has been used and, as a result of such use, is contaminated by physical or chemical impurities." Under most conditions, used oil that is recycled is not considered a hazardous waste.

What do I do with used oil? Used oil should be packed in **clean** and **undamaged** steel 55-gallon drum, 5-gallon bucket, or plastic tote suitable for transportation. Used oil generated on FMSI property shall not be purposefully mixed with any substance other than amounts of diesel fuel and non-PCB transformer oil.



- Containers for storing used oil must either be new (or remanufactured new) or a container that once held oil.
- Used oil tanks , containers, drip pans, secondary containments, oil carts, pipelines, and any other container used to hold used oil must be clearly labeled with the words "**Used Oil**".
- Containers must be clean and free of dents and rust, in no case should any other type of container be used to store used oil.
- Examples of allowable containers for used oil storage are 5 gallon buckets, 55 gallon steel drums, plastic totes, secondary containment systems, and bulk storage tanks.
- Tanks and containers used for oil storage must always be covered/closed to prevent contamination from rain, dirt and other debris. Do not allow water to pool on container tops.
- Always use a funnel when pouring used oil into containers and tanks to prevent unnecessary spillage.
- Full containers of used oil can be taken to the used oil tank farm at the Site 1 Truck Shop. The containers can be evacuated into a large above ground storage tank for recycling.

Why is used oil management important? If used oil is mixed with materials other than used oil, there is a potential that the used oil will need to be managed as a regulated hazardous waste, disposal costs ranging between \$400 - \$500 per 55-gallon drum. On the other hand, "good" used oil can be recycled and FMSI gets paid \$0.72 per gallon for our used oil.



Need additional information?

Refer to BMP 310 or contact a member of FMSI

Environmental Services

BMP 311 Used Oil Filter Management

What is a used oil filter?

A used oil filter is defined as any filter used to filter contaminants from oil. Shops changing out used oil filters must determine whether or not they are using terne plated filters. Terne plated filters are filters that have metal components that contain an alloy of lead and tin; possibly causing the filters to be regulated as a hazardous waste.



What about changing used oil filters in the field?

- Filters must be placed in the collection system, which consists of a filter drain rack that drains to a small storage tank at the work areas or brought back to the shop for proper management.
- Work area collection systems should be emptied in a timely manner and drained filters should be transported to the Site 1 truck shop and placed in the designated collection roll-off bins.

What do I do with used oil filters?

- All used oil filters must be **Hot Drained** for a period of 12 hours or **crushed and punctured**.
- Any cart, apparatus, or collected system used to drain oil filters that contains the drained oil for any period of time must be labelled "Used Oil". (see **BMP – Used Oil Management**).
- All used filters must be deposited in roll-off containers specially designated and labelled "Used Oil Filters and Used Oil", once drained, or crushed.
- Only used oil filters and fuel/diesel filters should be placed in the designated roll-off container. In no case should other filters (gasoline, coolant, etc.), trash, dirt, or other debris be placed in roll-off container containing oil filters.
- When the used oil filter containers are full, contact Environmental Services to arrange for shipment.
- Gasoline filters must be managed as a hazardous waste and placed in the "Used Gasoline Filter" satellite accumulation area. Used gasoline filters should not be drained before being placed in the Used Gasoline Filter hazardous waste drum.



Need additional information?

Refer to BMP 311 or contact a member of FMSI Environmental Services—*Date:6/13/2023 Revision: 0*
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BMP 313 Drum Container Management Summary

WHAT IS A DRUM / CONTAINER? A drum / container is anything that is used to store a product or waste, for example: 55-gallon drums, 5-gallon buckets, 1-gallon jugs, totes, hoppers, roll-off bins, or drums utilized as trash receptacles, and all other containers. These containers can be used to store oil, acids, solids, liquids, trash, etc..



Drum/Container Management Procedures

- Contents of the drum / container must always be labelled legibly. Labelling of contents should take place immediately upon adding material to the drum / container. **Drum / containers which are utilized for the storage of tools, nuts & bolts, parts, and other similar items are exempt from this requirement provided that the container can be visually inspected and no liquid accumulated in the container.**
- All drums / containers must be stored up, off of native soil/earth/dirt at all times on pallets or by other similar means.
- Lids or bungs should always be tightly secured on the drums / containers except when adding or removing material.
- Unused empty drums / containers stored outside of a designated storage area (i.e. tool room) should either be labelled as empty or stored in a designated "Empty Container" area.
- Empty drums / containers that once contained material other than a petroleum product should be rinsed by the user, with a material capable of removing the product. Environmental Services should be contacted to determine the best means for handling them. Empty drums / containers should then be transported to the Site 2 Asset Recovery Disposal Salvage Yard for recycling and/or disposal. All drum / containers delivered without being emptied and rinsed properly will be picked up by the user and returned to their original until they are properly rinsed.

WHY DO WE HAVE TO MANAGE DRUMS / CONTAINERS?

Improperly labelled drums could also lead to hazardous wastes being managed improperly, potentially resulting in



Need additional information?

Refer to BMP 310 or contact a member of FMSI Environmental Services-**Date:9/27/2024 Revision: 1**
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BMP 316 Non-Hazardous Used Absorbent

What are Non-Hazardous Used Absorbents?

Non-Hazardous used absorbent is absorbent that is used to absorb and clean up petroleum products, latex paint, and other non-hazardous products, which usually do not exhibit a hazardous waste characteristic.



Where do Non-Hazardous Absorbents and Rags come from?

Typically, they are generated from clean-ups involving petroleum products, coolants, latex, and water-based paints, etc.

Where do Hazardous Absorbents and Rags come from?

These are generated from clean-ups involving flammable solvents, oil-based paints, belt splicing materials, etc.

What if I am uncertain if it's Hazardous?

- Refer to the SDS Product Approval Sheets for instructions on specific products
- Contact Environmental Services for determination



Requirements for Used Rags and Non-Hazardous Waste Absorbents

- Uses absorbents and rags can only be thrown in the trash under direct guidance from Environmental Services
- Non-Hazardous used rags and absorbents that do not contain free flowing liquids must be periodically characterized by Environmental Services to determine if they can be disposed in the normal trash

Requirements for Used Rags and Hazardous Waste Absorbents

- A hazardous waste accumulation container must be a DOT approved open drum
- If collecting both hazardous rags and absorbent, they must be collected in separate containers
- A container for hazardous used absorbent must be clearly labelled with the words "Hazardous Waste" and "Used Absorbent" on a **Hazardous Waste Label**
- A container for hazardous waste used rags must be clearly labelled with the words "Hazardous Waste" and "Used Rags" on a **Hazardous Waste Label**
- The container must be closed and sealed at all times except when adding or removing waste. Putting a lid without a clamp doesn't close the container, as material will spill from it if it were to fall
- Drums must be stored as per **BMP 313 -Drum & Container Management**
- Container(s) must be stored in a Satellite Accumulation Area that is clearly marked and designated as per **BMP 328 – Satellite Accumulation Areas**
- Contact Environmental Services when a drum at a Satellite Accumulation Area is full. Full containers must be transported to the Central Hazardous Waste Accumulation Facility within 3 days from the date filled.



Need additional information?

Refer to BMP 316 or contact a member of FMSI Environmental Services-*Date:10/5/2023 Revision: 0*
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BMP 318 Housekeeping

What is Housekeeping

Housekeeping is to orderly store parts, containers, tools, equipment, and other materials and to timely dispose and/or recycle trash and salvageable materials. All areas are subject to periodic public and regulatory agency view. Unkept areas are frequently subject to increased agency inspection and scrutiny. Additionally, areas with poor housekeeping have increased hazards.



How Should Areas be Managed?

- Department areas must be kept neat and orderly.
- Trash must be placed in the appropriate garbage containers.
- Garbage containers should be covered and/or closed to avoid wind-blown transport of refuse.
- Clean and properly labelled drums may be used in areas without dumpsters. When full, the trash from the garbage drums shall be disposed of in the nearest garbage dumpster.
- Drums used for the garbage will be the responsibility of the shops or departments that are using them.
- Drums shall not be used for garbage when a garbage dumpster can be used at the location.
- In storage yards and work areas, construction materials, parts, and other materials must be stored on unbroken pallets in rows so that they can be easily accessed and inspected. Properly stored materials will not appear discarded as unusable items.
- Equipment and vehicles shall be inspected for leaks and any leaks shall be repaired. Leaking vehicles shall not be allowed to contaminate soils. (**Follow BMP 332 – Equipment Storage**)
- Dust from Crush and Convey shall be cleaned and maintained to prevent the build-up and blowing of dust.
- The Mine Operations Department shall clean and maintain paved roadways in a timely manner to prevent the build-up of dust and mud caused by vehicle travel.
- The Hydrometallurgical Department shall keep all SX/EW tankfarms, tankhouses, and other areas washed down as needed to keep standing process solutions in these areas at a minimum.

Basic Management Practices Related to Housekeeping

- BMP 302 – Used Solvent Storage
- BMP 303 – Hazardous Waste Paint
- BMP 305 – Lead Flake and Spent Lead Anode Management
- BMP 308 – Used Grease Management
- BMP 310 – Used Oil Management
- BMP 311 – Used Oil Filters Management
- BMP 313 – Drum/Container Management
- BMP 316 – Used Absorbents and Used Rags
- BMP 320 – Scrap Metal Management
- BMP 322 – Fluorescent-Mercury Containing Lamp Management
- BMP 323 – Contaminated Soils
- BMP 324 – Hazardous Waste Identification and Handling
- BMP 325 – Aerosol Can Management
- BMP 326 – Used Batteries
- BMP 327 – Waste Tires
- BMP 328 – Satellite Accumulation Areas
- BMP 332 – Equipment Storage
- BMP 335 – Used Power Poles and Railroad Ties
- BMP 336 – Scrap Wood
- BMP 338 – HDPE/LDPE Recycling
- BMP 339 – Scrap Belting



Need additional information?

Refer to BMP 318 or contact a member of FMSI Environmental Services–**Date:10/5/2023 Revision: 0**
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BMP 320 Scrap Metal Management

What is scrap metal?

Any metal that is made from any of the following materials: iron, steel, copper, aluminium, stainless steel, brass, manganese, and other specialty metals. Used and outdated welding rod and stubs are also considered scrap metal.



How can I manage scrap metal?

- Store in designated boats, containers, or neatly staged designated areas
- All scrap metal which **cannot** fit in a designated container shall be delivered to the **Site 2 Asset Recycling Yard** for shipment preparation
- If unable to transport due to size, contact Environmental Services for guidance
- Site 2 Asset Recycling Yard will refuse all loads that are not segregated properly
- Transported scrap metal to the Site 2 Asset Recycling Yard shall be unloaded in the designated area
- Scrap metal shall not be placed in dumpsters destined for disposal at the county landfill (Refer to BMP 306)

Prohibited Items

- Contaminated scrap metal
- Contaminated pipe
- Wood
- **Un-punctured** aerosol cans (punctured aerosol cans are acceptable)
- Electronic waste (including microwaves, computers, circuit boards, etc.)
- Batteries
- Chemicals
- Contaminated soil
- **Un-punctured** gas cylinders
- Oil filters



What should be done with contaminated scrap metal?

Decontamination of scrap metal is the generating departments responsibility and must be completed prior to transporting to the Site 2 Asset Recycling Yard. (Environmental Services must inspect)

What about light scrap metal?

- Store in designated boats, containers, or neatly staged in designated areas
- **Do not mix** with prohibited items (listed above)
- Deliver to Site 2 Asset Recycling Yard when too large for designated scrap metal container
- All aerosol cans must be **punctured** prior to being delivered to the Asset Recycling Yard
- All refrigerant containing appliances must be properly evacuated and signed off by an EPA certified HVAC/MVAC technician prior to being delivered to the Asset Recycling Yard for disposal

Need additional information?



Refer to BMP 320 or contact a member of FMSI Environmental Services-**Date:6/16/2022 Revision: 0**
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BMP 322 Fluorescent & Mercury Containing Lamp Management

What are Fluorescent and Mercury Containing Lamps?

Fluorescent lamps are identified by their small cross-sectioned diameter and tubular bulbs. They come in various shapes including straight lengths, U-shaped, and circular configurations.

Mercury containing lamps consist of a transparent or translucent cylindrical arc which is further enclosed in a glass bulb or outer jacket. Examples of mercury containing HID's include mercury vapor and high-pressure sodium lamps

What do I do when I have burnt out (spent) lights?

- Contact FMSI electricians and/or the designated contractor(s) to change out spent lights.
- Only designated personnel should change out or handle spent lights.



What do designated personnel do with burnt out (spent) lights?

- All areas designated for storage of spent fluorescent bulbs must be identified as a universal waste storage area. (Signage "Universal Waste Storage Area")
- No fluorescent lamps or mercury containing lamps shall be placed in dumpsters for disposal at the county landfill.
- All new and spent fluorescent lamps and mercury containing lamps shall be handed in a manner to prevent breakage
- Spent fluorescent lamps and mercury containing lamps shall be placed in the empty lamp boxes to prevent them from breaking.
- Empty boxes are available from Environmental Services.
- Spent lamp boxes shall be sealed except when adding spent lamps to the box.
- Never cut the ends or sides of a new box; always pull the ends open so they can be re-sealed by taping the ends
- Each box shall be labelled on the visible end "Universal Waste" and "Used Mercury Lamps the date the first item was placed into the box.
- Full boxes will be transported to the Universal Waste Storage Area.
- All fluorescent bulbs must be shipped within one year from start of their accumulation (date on box).
- All lamps must be neatly stacked in designated areas and stored on pallets in rows to minimize breakage and provide easy access for inspection.
- Broken lamps must be placed in a DOT approved drum/container used for the purpose of accumulating broken lamps. All lamp residues and fragments created due to breakage shall be immediately cleaned up and placed in the container. DOT approved drums/containers are available from Environmental Services.
- Drum/container used to store residues and fragments shall be labelled with the words "Hazardous Waste" and the contents such as: "Broken Fluorescent Lamps" or "Broken Mercury Containing Lamps" (See **BMP 313 – Drum and Container Management**)
- Spent fluorescent lamps or mercury containing lamps shall not be mixed with any other materials such as, but not limited to, solvents, batteries, scrap metal, scrap wood, or new fluorescent lamps.



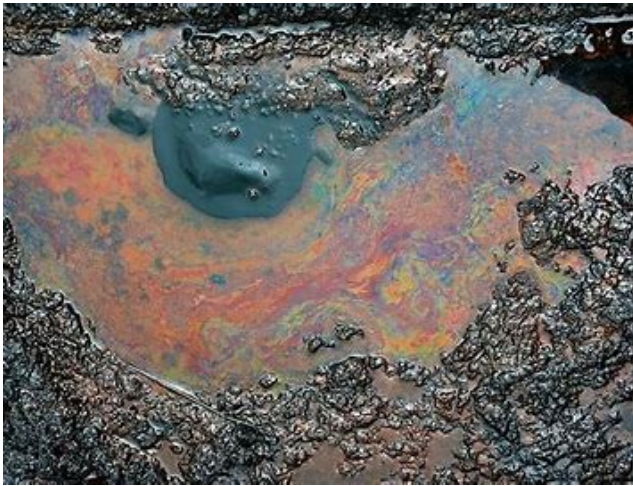
Need additional information?

Refer to BMP 322 or contact a member of FMSI Environmental Services—*Date:10/5/2023 Revision: 0*
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BMP 323 Contaminated Soils

What is Contaminated Soil?

Contaminated soil is any soil which has become contaminated with a material such as, paint, acid, petroleum, etc. Soil which has become contaminated with petroleum products is commonly referred to as petroleum contaminated soil (PCS).



What do I do with contaminated soils?

- Contact Environmental Services pursuant to the procedures outlined in BMP 400 – Environmental Incident Notification, BMP 401 – Sewage & Wastewater Spill Clean-up, and BMP 402 – Spill Clean-up.
- No soil shall be placed in dumpsters/roll-off containers for disposal at the county landfill.
- Containers shall not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.

What do I do with petroleum contaminated soils (PCS)?

- PCS is to be collected and placed into one of the designated 20 cubic yard roll-off containers located around the mine site.
- Designated PCS 20-yard roll-off containers are located at the 40K Fuel Dock, 30K Fuel Dock, 20K Fuel Dock, SP-5 laydown yard, Crush Convey maintenance shop laydown yard, and contractor laydown yard for short term storage of PCS.
- Once the roll-off bin is full, contact the FMSI Environmental Waste Coordinator immediately.
- Petroleum contained soils are permitted to be placed in other types of containers (drums, buckets, totes) provided they are transported to one of the designated PCS roll-off containers listed above immediately. It will be the responsibility of the division generating the PCS to dispose of it inside the PCS roll-off bins. No long-term storage of PCS will be permitted in any other container except the designated 20-yard roll-off bins.
- Excluding roll-off containers, all containers used to store PCS shall be kept closed, except to add or remove PCS. Drums/buckets/totes shall be labelled and managed according to Best Management Practices No. 313 – Drum/Container Management.

What happens to the petroleum contaminated soils?

Environmental Services will characterize and coordinate final disposal of the 20-yard PCS roll-off bins within 90 days after the bin has reached full capacity.



Need additional information?

Refer to BMP 323 or contact a member of FMSI Environmental Services–*Date:10/5/2023 Revision: 0*
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BMP 324 Hazardous Waste Identification and Handling

What is Hazardous Waste?

Hazardous waste is defined as any discarded substance that, because of its quantity, concentration, physical, chemical, or infectious characteristics, may cause or contribute to a serious illness or pose a substantial or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed.



What are the common hazardous wastes on FMSI property?

- Waste Paint
- Paint Thinner
- Belt Splicing Materials
- Tire Repair Debris
- Broken Light Bulbs Containing Mercury
- Waste Aerosol Cans & Liquids
- Rags, Gloves, Absorbents Contaminated with Hazardous Waste
- Broken Lead Acid Batteries

What guidelines must be followed for hazardous waste?

- Waste material is considered a characteristic hazardous waste if it displays at least one of four hazardous characteristics, which include: 1) toxicity, 2) corrosivity, 3) reactivity, and 4) ignitability. In addition, certain commercial chemical products are considered hazardous waste when they are discarded.
- All waste generated on FMSI property are potentially subject to hazardous waste regulations. In order to determine which waste are applicable to this policy, contact the Environmental Services Department or review the SDS Product Approval Forms in your area.
- If a waste is determined to be hazardous waste, Environmental Services will notify the department on the specifics of managing the waste. Wastes determined to be hazardous are to be managed at either satellite accumulation areas (located at the point of generation), or the Central Hazardous Waste Accumulation Facility (located at the Site 1 Environmental Yard).

Can hazardous waste be mixed with other waste?

Under no circumstances should hazardous waste be mixed with other waste. In doing so, the entire waste would be regulated as a hazardous waste and increase costs and hazardous waste generation amounts.

What happens to hazardous waste stored at the central hazardous waste accumulation site?

- No hazardous waste shall be stored at the hazardous waste accumulation site periods greater than 180 days.
- Hazardous waste is shipped offsite for disposal.

See BMP 324 for guidelines that Environmental Services must follow for

Need additional information?

Refer to BMP 324 or contact a member of FMSI Environmental Services—*Date:10/5/2023 Revision: 0*
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BMP 325 Aerosol Can Management Summary

How are waste aerosol cans defined?

A waste aerosol can is an aerosol can that is empty, and product can no longer be removed, or a full/partially full can that is no longer operable.

Properly punctured (puncturing unit) aerosol cans can be managed as scrap metal. Unusable aerosol cans are considered hazardous waste until punctured.



What do I do with waste aerosol cans?

- Waste aerosol cans should never be thrown in the general trash. Punctured aerosol cans can be disposed in scrap metal bins.
- Dispose of waste aerosol cans in drums provided by Environmental Services Department.
 - Contact Environmental Services to add new drums or if the drums become damaged.
- Environmental Services will collect and transport the waste aerosol cans to the Site 1 Central Accumulation Area, unless, your department has a puncturing station.
 - Follow BMP 325A for puncturing procedures.

Common Aerosol Can Management Violations:

Missing nozzles, improper disposal, and improper storage (must be stored in flammable cabinet when not in use) are the most common violations pertaining to aerosol cans. Improper handling/disposal of aerosol cans can result in a potential fine, from Arizona Department of Environmental Quality, up to **\$70k** per citation per day (auditor's discretion).



Need additional information?

Refer to BMP 325 & BMP 325A or contact a member of FMSI Environmental Services–Date:5/17/2021 Revision: 0
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BMP 325a Aerosol Can Puncture Procedure

Why do we puncture aerosol cans?

Aerosol cans, when deemed a waste, are considered a hazardous waste because of the pressurized container in which the residual contents reside. If heat or pressure are applied to the can, it would rupture, causing either a fire or explosion. By definition, any material, once deemed a waste, which will violently react to those conditions would be considered a hazardous waste.



Unpunctured Aerosol Can Satellite Accumulation Drum



What are the requirements to puncture aerosol cans?

- All appropriate aerosol cans will be punctured at a designated location in the Central Accumulation Area.
- The container used to collect the aerosol can waste must always be closed during storage, except when it is necessary to add waste.
- The container must be clearly marked with the word "Waste Aerosol Liquids" on a Hazardous Waste Label.
- The container must be clearly labelled with the proper hazard marking (i.e. Flammable).
- The container must be dated after filled and relocated to the Central Accumulation Area within 72 hours.
- The container must be a DOT approved drum, compatible for aerosol can waste.
- Ensure the drum is properly grounded.
- **Do not puncture aerosol foaming agents (isocyanates), aerosol marked "Pesticides" or "Corrosive", or that contain any contents that would be highly acidic or basic.** These cans will be collected separately in a drum marked for unpunctured aerosol cans and disposed of accordingly.
- All authorized operators of the puncturing device must be task trained on the puncturing unit. Under no circumstances should aerosol cans be punctured with any tool except the Aerosol Can Puncture Unit located in the Central Accumulation Area at Site 1.
- After puncturing the aerosol can, empty cans are managed as scrap metal. See BMP 320 – Scrap Metal Management.
- Sign above the puncturing unit will identify authorized operators.

Supporting BMPs

- BMP 302-Used Solvent Storage
- BMP 303-Hazardous Waste Paints
- BMP 306-Solid Waste Management
- BMP 325-Aerosol Can Management
- BMP 328-Satellite Accumulation Areas
- BMP 800-SDS and Product Approvals

Need additional information?

Refer to BMP 325a or contact a member of FMSI Environmental Services-*Date:3/13/2023 Revision: 0*
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BMP 326 Used Batteries

What classifies as a used battery?

A used battery is any battery that is no longer usable for its intended purpose. (i.e., no life left, broken, corroded, etc.)



Batteries containing Nickel-Cadmium, Nickel-Metal, Alkaline, and Lithium-Ion

- Obtain collection container from Environmental Services. The container must be labelled "Universal Waste"
- Department/Division shall write the date when first battery is disposed in the collection container to start the accumulation start date
- Call Environmental Services if batteries are too large for container opening
- Do not change labelling
- Do not move or relocate collection containers without notifying Environmental Services



What do I do with Lead Acid Batteries?

- All used lead acid batteries must be transported directly to the Site 1 "Heavy Duty Truck Shop – Used Battery Bin"
- Batteries must be kept closed/covered during transport and labelled "Universal Waste"
- New batteries should be stored inside or under cover and be placed off the ground on pallets/skids
- All used batteries must be placed on a secondary containment pallet and be properly labelled

General Battery Management

- FMSI recycles all lead acid batteries through secondary metal recycler
- Used battery handling, collection and storage will ONLY be allowed at designated areas
- Used battery containers will be shipped for recycle at a minimum of every 12 months
- All batteries must be stored by type (described above)

What to do with Broken/Leaking Lead Acid Batteries?

- Broken/Leaking Lead Acid Batteries are managed as a hazardous waste and must be handled appropriately
- Use appropriate PPE when handling broken or leaking lead acid batteries
- Safely place broken battery into a plastic poly open top drum and label drum "Hazardous Waste Broken Lead Acid Battery"
- Notify Environmental Services for disposal guidance

Need additional information?

Refer to BMP 326 or contact a member of FMSI Environmental Services-*Date:6/16/2022 Revision: 0*
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BMP 327 Waste Tires

What are the 2 types of waste tires?

- 1.) **Light Duty Truck Tire:** A waste light duty truck tire is “smaller than three feet (or 36 inches) in outside diameter and no longer suitable for its original purpose because wear, damage, or defect”.
- 2.) **Mining Industry Off Road Waste Tire:** A mining industry off-road waste tire is “greater than three feet (or 36 inches) in outside diameter, used in mining operations and is no longer suitable for its original purpose because of wear, damage or defect”.



How do I properly dispose of waste light duty truck tires?

All smaller waste light truck tires (less than 3ft in diameter) are collected in a roll-off container located at the Tire Shop in preparation for shipment off-site to a tire recycler.

What are the storage requirements for waste mining industry off-road tires?

- Waste tires are collected at a permitted outdoor waste tire storage site before being offered for recycling, reuse, or burial and where more than 100 waste tires are stored during any given day.
- No more than 500 off-road tires shall be stored at an un-permitted mining facility outside of a burial cell.
- No storage pile shall exceed 20 feet in height.
- No pile shall be located more than 150 feet from a twenty-foot-wide access road that will allow fire control apparatus to approach the pile.
- No smoking will be permitted within 50 feet of a storage pile and “No Smoking” signs will be placed in a conspicuous location.
- No storage pile will be located within three feet of any property line.
- No storage pile will be stored in a fashion that exceeds six feet in height and stored between three and ten feet of any property line.
- Class “2A-10BC” type fire extinguishers must be placed at well-marked locations throughout the storage area so that no fire extinguisher is located more than 75 feet from any tire.
- All electrical wiring, fixtures, or appliances in the area must comply with the national electric safety codes.
- A storage pile, once completed, may become a designated burial cell once all applicable regulations and notices have been completed.

Other uses for mining off-road waste tires

- With guidance from Environmental Services, Mining Off-Road waste tires may be stacked for barriers and/or used for barricades to temporarily close roadways.
- Mining Off-Road waste tires may only be disposed of by following the approved methods outlined in BMP 327.
- Mining Off-Road waste tires may be sold for recycle, pending approval from Environmental Services and Asset Recycling.

Please see BMP 327 for information on how to properly bury mining industry off-road tires.



Need additional information?

Refer to BMP 327 or contact a member of FMSI Environmental Services—*Date:11/1/2023 Revision: 0*
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BMP 328 Satellite Accumulation Areas Summary

What are Satellite Accumulation Areas (SAA's)?

Satellite Accumulation Areas are managed, and controlled spaces designated for the storage of waste streams, including hazardous waste. They are used to increase efficiency of waste collection and reduce costs associated with waste disposal.



What is Hazardous Waste?

- Waste material is considered hazardous if it displays
 - Toxicity
 - Corrosivity
 - Reactivity
 - Ignitability
- SAA's are regulated under the EPA's regulations for the Resources Conservation and Recovery Act (RCRA) requirements for hazardous waste management.

What if I'm uncertain if my work generates Hazardous Waste?

- Always contact Environmental Services for uncertainties with waste determination



Requirements for SAA Management:

- Waste must be collected in DOT approved containers such that leaks won't occur
- Wastes are collected in SAA's until **55 gallons** of hazardous waste or **1 quart** of acutely hazardous waste are accumulated, and bins stay closed when not in use
- Containers at SAA must be at or near the process which generates the waste
 - The person who operates this process is responsible for this waste
- Wastes must be sorted, and containers must be labelled "Hazardous Waste"
- Drums shall not be over-filled (heat expansion)
- Bonding and grounding wires used when transferring flammable liquids (sparks)
- Environmental Services is contacted within 3 days once a container is full



Need additional information?

Refer to BMP 328 or contact a member of FMSI Environmental Services-*Date:7/23/2021 Revision: 0*
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BMP 332 Equipment Storage

What is equipment storage?

This BMP applies to storage of any machinery that contains fluids that have the potential for leakage. Future use of equipment can include reuse, sale, or disposal. The equipment may contain fluids such as oil, grease, antifreeze, hydraulic fluid, gasoline, diesel, brake fluid, etc. Items such as vehicles, haul trucks, shovels, drills, hydraulic cylinders, gearboxes, transformers, and numerous types of equipment are included in the definition of equipment.



Why do we need to manage equipment that is stored outdoors?

Equipment in storage outdoors has the potential to leak fluids onto the soil. Leaking equipment that is stored for extended periods can lead to costly clean-up efforts and is contrary to FMSI's Environmental Stewardship Values.

Short-Term Equipment Storage Procedures

All equipment being stored for periods **under one month** will fall under the short-term guidance.

- All equipment will be stored up, off the ground on pallets, concrete, or asphalt to help facilitate inspection and observation of leaks. Equipment that has wheels or tracks is considered up off the ground.
- A visual inspection must be made before temporarily storing any equipment. If any leaks are noted during the inspection, precautions must be made to ensure fluids are contained. This may include repair, placement of drip pans and absorbent pads, or draining the fluid. See **BMP 310 – Used Oil Management**
- If it is determined that the equipment will be stored longer than one month, it must then be managed under the long-term storage requirements.

Long-Term Equipment Storage Procedures

All equipment being stored for periods **over one month** will fall under the long-term guidance.

- All unnecessary fluids will be drained before the equipment is stored. Fluids that are **required** to retain the integrity of the equipment are permissible.
- All equipment will be stored up, off the ground on pallets, concrete, or asphalt to help facilitate inspection and observation of leaks. Equipment that has wheels or tracks is considered up, off the ground.
- Inspection of laydown yards and any equipment stored that is not inside a building will be conducted periodically by personnel from Environmental Services and/or the department laydown yard owner.

What to do if a leak or contaminated soil is found?

- If a piece of equipment is leaking, you must address it immediately by repairing the problem, adding a drip pan under the leak, or draining the fluid.
- If contaminated soil is found, contact Environmental Services to determine possible clean-up efforts. Environmental Services personnel will give guidance as to how the soil should be managed.



Need additional information?

Refer to BMP 332 or contact a member of FMSI Environmental Services—*Date:11/1/2023 Revision: 0*
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BMP 335 Used Power Poles and Railroad Ties

What is a used Power Pole?

A used power pole is a vertical construction consisting of treated wood to support a power transmission cable or line, or telephone line that is no longer usable for what it was intended.

What is a used Railroad Tie?

A used railroad tie is a transverse support to which rails are fastened to keep them in line, gage and grade that is no longer usable.



What do I do when I have used ties or power poles for disposal?

- All used ties should be transported to the Asset Recycling yard.
- Contact Asset Recycling for guidance on where to place used power poles.
- Used ties and poles must never go into a trash or wood dumpster.
- For large clean-up projects requiring disposal of tie or pole debris, contact Environmental Services for guidance.

What do I do when I use ties or power poles in my laydown areas?

- Keep used ties or poles stacked neatly when not in use.
- If the used ties or used power poles become unusable, follow the guidelines above for disposal.

What is done with used ties and used poles?

- All used railroad ties and power poles will be stored in a manner that will not constitute disposal.
- Used power poles will be stored in a pole rack and used ties will be placed on a pallet and banded for resale.

Need additional information?

Refer to BMP 335 or contact a member of FMSI Environmental Services—*Date:11/1/2023 Revision: 0*
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BMP 336 Scrap Wood

What is scrap wood?

Scrap wood is any piece of wood that can no longer be used for the purpose it was intended.



What do I do when I have scrap wood for disposal?

All scrap wood should be transported to the Scrap Wood Yard, currently located West of Road 4 above the administrative building at Site 2. In circumstances where removal of wood to the Scrap Wood Yard increases the cost of doing business beyond what is acceptable, **SMALL** amounts of wood may be disposed of in the regular trash or roll off bins for disposal at the landfill. This is at the discretion of the area supervisor and Environmental Services.

What materials CANNOT be placed with scrap wood for reuse or for fighting training exercises?

- Railroad Ties
- Power Poles
- Treated Wood
- Painted Poles
- Trash
- Styrofoam
- Aerosol Cans
- Batteries
- Paper

This is not an all-inclusive list; any other unacceptable material will be removed prior to unloading in designated area by the responsible party. The request is necessary toward compliance with the ADEQ administered Open Burn Permit Requirements.

What do I do when I store scrap wood in my laydown yard?

- Keep scrap wood stacked neatly or placed into a bin designated for scrap wood only.

What is done with scrap wood?

- The scrap wood yard will be burned on monthly to quarterly basis or as scheduled otherwise for fire-fighting training. This activity is permitted under the Open Burn Permit.

What is done with wood ash after a burn?

- The wood ash is allowed to cool for 1-2 weeks to make sure that there is no risk of ignition. The wood ash is then loaded into a roll-off designated for disposal at the local landfill within 90 days or less. Ensure that the activity is communicated with Environmental Services to record and document the material movement and temporary storage.

Need additional information?

Refer to BMP 336 or contact a member of FMSI Environmental Services—*Date:11/1/2023 Revision: 0*
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BMP 337 Latex/Water-Based Waste Paint

What is latex/water-based waste paint?

Water-based paints are paints that can be washed using water (excluding aerosols). Aerosols must be managed according to **BMP 325 – Aerosol Can Management**. Latex/water-based paints are not hazardous waste when disposed, however, they can be managed according to the solid waste regulations.



What do I do when I have latex/water-based paint?

All latex/water-based paints should be used completely when possible. **Excess paint shall not be allowed to air dry** in the containers or be thrown into a trash bin. If any latex/water-based paint becomes unusable, the containers shall be taken to the area's Satellite Accumulation Area or the Environmental Central Accumulation Area at Site 1 for further processing.

What procedures do designated personnel follow for latex/water-based painting?

- Only latex/water-based paints approved through the SDS approval process may be used.
- Users are responsible for ensuring that used leftover, or obsolete paint and all other paint products or waste are managed correctly during use, storage, and disposal.
- If spray paint other than aerosol cans is used, refer to BMP 100 for spray painting guidelines.
- All paint materials must be stored in a Flammable Storage Cabinet and marked "Flammable Materials Only".
- No paint containers shall be left uncovered for the purpose of air drying.
- All paint should be used on the project for which it was intended. Excess paint that will not keep on the shelf shall be returned to Environmental Services for further processing.
- Empty containers can be disposed of in the regular trash only when the **container has less than 1 inch and/or less than 3% by volume of material in the bottom**.
- Every effort should be made to ensure containers are emptied as much as possible prior to disposal.
- No paint should be deliberately sprayed or poured on the ground.
- Spilled paints should immediately be picked up and disposed of under the guidance of Environmental Services.

What other information is required for painting projects?

- Users should read SDS instructions, all applicable Environmental Best Management Practices (BMPs) and the safe operating procedures before beginning any project.
- Personal protective equipment is required on all projects.

Need additional information?

Refer to BMP 337 or contact a member of FMSI Environmental Services–*Date:11/1/2023 Revision: 0*
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BMP 338 HDPE/LDPE Recycling

What is HDPE?

HDPE stands for high-density polyethylene, which is plastic produced with a small amount of co-monomer (typically butane or hexane) that is used to control chain branching. Controlled branching results in improved performance in applications where certain types of stresses are involved. Most black plastic pipe, other than drip, is HDPE.



What is LDPE?

LDPE stands for low-density polyethylene, which is plastic where the branch chains are unable to pack together very tightly, which results in a relatively low density. The drip line used on the leach fields is typically LDPE.

What do I do when I have HDPE or LDPE for disposal?

Contact Environmental Services if you have scrap HDPE or LDPE pipe for disposal

What if I am performing work in the field and I have scrap plastic shavings?

HDPE pipe shavings – Must be collected and stored where all scrap HDPS pipe is stored.

LDPE pipe shavings – Must be added to the roll-off used for contaminated LDPE pipe.

Can scrap HDPE and LDPE be stored in laydown areas?

Yes, scrap HDPE and LDPE can be stored in laydown yards provided the procedures outlined below are followed:

- Keep scrap HDPE and LDPE stacked neatly or place the material into a bin designated for scrap HDPE or LDPE only.
- Sort all plastics by type (i.e., HDPE, LDPE).
- For additional information on Laydown Areas refer to **BMP 339 – Laydown/Storage Yards**.

What does FMSI do with scrap HDPE and LDPE?

Most of the scrap HDPE pipe is cut by Greenline Polymers for recycling. Contaminated LDPE pipe (drip pipe) goes to Republic Services Apache Junction Landfill. Contaminated LDPE pipe should never be mixed with regular trash.



Need additional information?

Refer to BMP 338 or contact a member of FMSI Environmental Services–*Date:11/1/2023 Revision: 0*
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BMP 339 Scrap Belting

What is scrap conveyor belting?

For the purpose of this BMP, conveyor belting consists of rubber compounds combined with steel cord and/or other strengthening materials and is used in conveyor systems.



What do I do with scrap conveyor belt?

- All scrap conveyor belting must be collected once a job is complete and either transported directly to Site 2 Asset Recycling Yard or transported back to the shop for storage/reuse.
- No conveyor belting should be placed into any plant trash bin designated for the city landfill
- Conveyor belting should be stored by type prior to delivery to Site 2 Asset Recycling Yard (i.e., steel belted and non-steel belted should be separated).
- Scrap conveyor belting should not be stored or mixed with trash, scrap wood, containers, etc. The responsible party will remove any unacceptable material prior to unloading in designated area.

How do I store scrap conveyor belt in a Laydown Yard?

- Keep scrap belting stacked neatly
- Sort all belting by type (i.e., steel belted, non-steel belted).

What is done with scrap conveyor belt?

- Most scrap belting is sold to individuals and companies through Asset Recycling.
- Belting which cannot be sold through Asset Recycling will be disposed of at a designated landfill.



Need additional information?

Refer to BMP 339 or contact a member of FMSI Environmental Services—*Date:11/1/2023 Revision: 0*
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BMP 340 Prill Management

What is Prill?

Prill is ammonium nitrate used at Safford for blasting activities and is mixed with fuel oil to create ANFO – ammonium nitrate and fuel oil. Prill is considered an oxidizer by definition which is classified as a hazardous material. On occasions, small amounts of prill may be spilled on the ground and must be managed properly.



What is the Procedure for Handling Spilled Prill?

- Since prill can still be detonated to release energy, spilled prill will be managed as a product, not as a waste.
- Spilled prill at the loading/unloading area (i.e., bins) will be containerized immediately after each truck.
- Containers will be labelled, closed, and in good condition.
- The containerized prill will be taken to a blast site and added into the blast hole. Site conditions may dictate that the prill be poured into the bottom of a blast holes (i.e., over drilled holes may be backfilled with spilled prill rather than drill cutting) prior to adding the ANFO, poured on top of the ANFO column prior to stemming (i.e., away from booster), or if in small quantities added directly to the ANFO column when loading. In any case the prill loaded into a hole must be in contact with ANFO.
- After the containerized prill is poured into the blast hole/s, the site or responsible contractor will detonate the shot using standard blasting procedures.

Employee Training

All personnel shall receive training or at least have access to this BMP when dealing with management of prill on Safford property. Training will be conducted by Supervisors and/or team environmental coordinator.

Need additional information?

Refer to BMP 340 or contact a member of FMSI Environmental Services–*Date:3/26/2024 Revision: 0*
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BMP 341 Electronic Waste Management

What is electronic waste?

Any spent or used electronic device including microwaves, computers, monitors, radios, control instrumentation, circuit boards, cell phones, etc., resulting from industrial, commercial mining operations, and community activities.



What do I do if I generate electronic waste?

If electronic waste is something that was originally distributed by the MIS department, such as cell phones, computers, radios, etc; contact MIS who will ask that the materials are taken to the MIS trailers. Anything else generated on the mine site that was not distributed by MIS such as microwaves, TV monitors, and circuit boards, must be taken to the designated satellite accumulation area and placed in pallets or drum for further management from Environmental Services.

How is electronic waste managed?

- Environmental Services will pick up the electronic waste from the satellite accumulation areas and transport it to the universal waste building (Signage “Universal Waste Storage Area”) at Site 2.
- Each object or container will be labelled “E Waste” and labelled with the proper date of accumulation.
- All electronic waste must be transported off site within one year from the start of its accumulation (date written on object or container).
- Electronic waste should not be mixed with other materials such as batteries, fluorescent lamps, bulbs, etc.

What happens to the electronic waste?

Most electronic waste is recycled. A generator of electronic waste has the burden of proof to show the waste is not toxic per Resource Conservation and Recovery Act regulatory requirements. The regulatory requirements also allow a generator to recycle the waste rather than deeming it either toxic or not toxic.

Electronic waste containing heavy metals?

If spent electronics contain heavy metals i.e., mercury, cadmium, etc., as long as the electronic waste is properly re-used or recycled, hazardous waste regulations do not apply. If electronic waste is being disposed of, it may have to be disposed of as a hazardous waste.



Need additional information?

Refer to BMP 341 or contact a member of FMSI Environmental Services—*Date:11/1/2023 Revision: 0*
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BMP 342 Asset Recycling & Disposition

What is Asset Recycling & Disposition?

Asset Recycling is the process of effectively managing our under-utilized assets through redeployment, recycling, or marketing in a safe, efficient, and environmentally conscious way. Assets should be managed using the Investment Recovery Associations Value Chain Hierarchy of Reuse it, Return it, Trade it, Sell it, Donate it, Disposal.



What is AR&D Responsible for Managing at FMSI?

- Scrap Metal
- Company owned vehicles/equipment to be sold at auction
- Used conveyor belt to be sold at auction
- Items being transferred to other FCX operational sites
- Other items that possess a value for Asset Recycling purposes



What is AR&D Not Responsible for Managing at FMSI?

- Regulated Waste (hazardous waste, universal waste, used oil, e-waste, etc.)
- Office furniture
- Oil Filters
- Oily/greasy hoses

How to Manage Refrigerant Containing Equipment?

- Arrangements must be made with the AR&D Technicians or Coordinator prior to dropping off any equipment that contains refrigerant at asset recovery.
- Technician or Coordinator will date the equipment when it is dropped off at the yard.
- Arrangements must be made by the releasing department with a certified HVAC Technician to recover the refrigerant out of the equipment.
- Once refrigerant has been evacuated, the unit should be marked as with the word, "scrap", "empty", or "evacuated" and must be initialled by the certified technician.

How to Manage Process Solution Contaminated Equipment?

- FMSI Environmental Services must be notified before any items that have been in contact with process solution are dropped off at asset recovery.
- Based on the assessment done with Environmental Services, equipment will be managed appropriately.

Procedures for Delivery of Items/Materials to the FMSI Asset Yard

Please refer to **BMP 342** for in depth instructions for delivering vehicles, equipment, or other items to the Asset Yard.

Need additional information?

Refer to BMP 342 or contact a member of FMSI Environmental Services—*Date:8/13/2023 Revision: 0*
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BMP 343 Undeployed Airbags

What are Safford Practices Regarding Airbags in Vehicles?

Airbags are for the safety of the operator of the vehicle. Working airbags should not be removed from the vehicle unless they are being removed for reuse or specified disposal. This best management practice only applies to undeployed airbags being removed for disposal.

Are undeployed Airbags a Regulated Waste?

Yes! Airbags, whether made of plastic, vinyl or metal, contain a propellant called sodium azide. This is a hazardous substance which is dangerous if inhaled and may burn exposed skin. Objects contained with this substance require costly handling and disposal methods.



What are Regulations Associated with Undeployed Airbags?

- Airbags that have not been deployed must be removed from the vehicle prior to crushing. Once you have removed the intact cartridges, you can send them to a reclamation facility. If you do, you will not have to treat them as a hazardous waste. Air bag cartridges that have not been deployed are a hazardous waste unless they are reclaimed.
- Undeployed airbags removed from vehicles must be managed in a manner that prevents them from being accidentally deployed. Where applicable and allowable, store in a dry and secure area.
- If the airbags have been accidentally deployed, the material is no longer dangerous, and you will not have to take special precautions.

How are Undeployed Airbags Properly Managed?

- Leave deployed airbag unit in vehicles since deployed airbags do not pose risk to human health or the environment.
- Try to store undeployed airbags indoors, protected from the weather until they can be resold.
- Store airbags cover side up and do not stack.
- Try to keep away from high heat and in an area free of oil, grease, chemical, and water.
- If you send airbags, have retained shipping papers that indicate the name of the declaimer, the date of transfer, and the quantity of airbags/cartridges shipped.

Is Deploying an Undeployed Airbag Allowed?

Manual deployment of airbag components for disposal purposes is prohibited at FMSI. Airbag deployment is considered a "treatment of a hazardous waste" and may require state issued permits from regulatory agencies or require personnel certification or licensing to perform airbag deployment at a facility.

Need additional information?

Refer to BMP 343 or contact a member of FMSI Environmental Services—*Date:7/15/2024 Revision: 0*
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BMP 400 Environmental Incident Notification

What is an Environmental Incident?

Environmental incidents are considered any events that could lead or has led to a deviation from a significant aspect or permit condition. They are often human-caused or may result from natural events. **Proper notification requires that the incident be reported first to area supervision then communicated to the Security Gate.**



What are examples of Environmental Incidents?

- **Spills**
 - Equipment failure (regulated and enforced under permits)
 - Permit deviations or modifications (from permits or other approved plans)
 - Environmental concerns (from the general public or other external concerns)
 - Wildlife incidents

What do I do when a spill Occurs?

- Employees discovering unknown releases/spills should immediately inform area supervisor and security
 - Security will contact environmental services
- When safe, attempts should be made to identify and stop the released material
 - Refer to nearby containers/signage
- **If material cannot be safely identified, evacuate the area**
- Avoid contact with liquids and avoid inhalation of vapor/fumes
- Construct trenches/dikes for larger spills



Spill Clean Up

- Area Supervisor will organize proper clean-up per **BMP 402 Spill Clean Up**
- Other clean-up procedures
 - BMP 313, BMP 322, BMP 323, BMP 324, BMP 103, BMP 106, BMP 112, BMP 201, BMP 600

Need additional information?

Refer to BMP 400 & BMP 402 or contact a member of FMSI Environmental Services-*Date:7/15/2021 Revision: 0*
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BMP 401 Sewage and Wastewater Spill Clean Up

Why are Sewage and Wastewater Potentially Dangerous to Human Health?

Sewage, solid waste, and all other waterborne waste that comes into or from the Wastewater Septic System can contain Pathogenic (disease-causing) microorganisms. These microorganisms may be responsible for Bacillary Dysentery, Cholera, Typhoid Fever, Hepatitis Types A or B, Polio, and Gastroenteritis. Wastewater can also contain parasites.



How can I Minimize the Risk of Coming into Contact with these Contaminants during a Wastewater Spill Clean Up?

- Wash hands frequently and always prior to drinking, eating, and smoking.
- Eat, drink, and smoke only in designated areas, never while working in direct contact with wastewater.
- Wear proper PPE (see Proper PPE)
- If work clothes become soiled, change into clean garments immediately. If you get drenched, take a shower before changing into a clean change of clothes.
- If it can be avoided, do not wash wastewater contaminated work clothing at home, and avoid going home in your work clothing or boots. Change into clean clothing and clean shoes before going home.
- Clean all contaminated tools with a 2% solutions of household bleach and water.
- Handle sharp objects with one hand and with extra care to prevent cuts and punctures that may direct portals of entry into the bloodstream.
- Treat cuts and abrasions promptly, using proper first aid measures. Report all such injuries to your supervisor.

What is the Proper PPE to Wear when working around Wastewater or Sewage?

- Always wear gloves and plastic face shields if there is a probability of exposure to aerosols.
- Wear respiratory protection if there is a probability of exposure to mist, sprays, and dusts.
- Always wear long sleeve shirts.
- Wear a coated Tyvek suit if there is a probability of exposure to splashes on cloths.
- Always wear waterproof latex gloves for light work; reinforced rubber gloves for heavy activities; and puncture-resistant gloves for screening waste and removing sharp objects.
- Waterproof rubber aprons that can be easily washed if available are another option if there is a probability of exposure to sprays/splashes.
- Always wear waterproof rubber boots that can be easily washed.

Who do I Report a Wastewater or Sewage Spill to?

At Safford Operations a sewage spill is most likely to come from an overturned Porta-John or an overflow of a septic tank. In either case, you should notify your supervisor. Then clean up should be coordinated through Contracts Administration or Environmental Services.

Need additional information?

Refer to BMP 401 or contact a member of FMSI Environmental Services-**Date:7/15/2024 Revision: 0**
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BMP 402 Spill Clean Up Summary

What is a Spill?

A spill is any event, outside of normal operations, resulting in a loss of product or waste material. Spills include, any loss of product associated with both controlled and uncontrolled pipeline breaks, tank overflows, or hose breaks. This includes material losses that are contained by overflow systems, secondary containment, and leach stockpiles



What do I do when I find a spill?

- **Refer to BMP 400 – Environmental Incident Notification**

Which spills require clean-up?

- **All** spills require clean-up; except
 - Exemptions approved by Environmental Services

Information needed for clean-up.

- Refer to Safety Data Sheets (SDS) in each work area, and/or on the Dolphin System.
- Personnel involved in the clean-up shall wear an appropriate level of Personal Protective Equipment

Petroleum (oil) spills on concrete/pavement?

- Absorbent material (pig mats) can be used to soak-up spills from within concrete
- If absorbent material is free of free-flowing liquid, it can be placed in the dumpster
- Absorbents used to clean gasoline are a hazardous waste and must be placed in a hazardous waste container
 - **BMP 313 – Drum Mgmt.**

Petroleum Spills on Dirt

- Handheld non-sparking shovel should be used when possible, other equipment used as needed
- **Excavate Only contaminated soil**
- Petroleum-contaminated materials must be transported to Site! Central Accumulation Area, or roll offs at 40k and Lone Star Fuel Docks, SP5, and Secondary Crusher
- Antifreeze spills must be containerized and delivered to the Central Accumulation Area
- **Call FMSI Environmental Services Personnel to receive clean-up directions for large petroleum spills**

Sulphuric Acid Spills?

- Report to area supervisor and contact security gate
- Environmental Services will provide clean-up guidance



Need additional information?

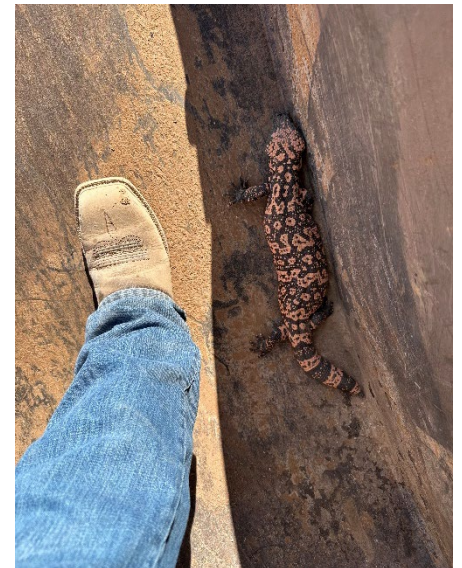
Refer to BMP 402 & 400 or contact a member of FMSI Environmental Services–**Date:9/27/2024 Revision: 1**
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BMP 600 Wildlife Reporting

What Do I do if I Encounter a Wounded or Dead Animal?

If wounded or dead animals are encountered, **do not** disturb, move, relocate, or dispose of them before contacting Environmental Services for guidance.



Internal Reporting Procedure

Contact Environmental Services as soon as possible after identifying any animal that has been injured or killed. The information to report to Environmental should consist of:

- Mortality or injury
- Location of incident
- Species of wildlife involved
- Are there any immediate, continuing safety concerns to human or wildlife?
- Special circumstances, if any, involved in the incident
- Cause of mortality (if known)
- Date and time mortality found (if time of mortality is unknown)

DO NOT

- Contact any external agencies
- Touch, take into possession, move, or bury any injured or dead animal or bird

Environmental Services will investigate each incident involving any dead or injured bird or other wildlife to determine what additional action should be taken. They will also make any necessary external contacts in coordination with Freeport-McMoRan Legal and the Director of NA Environmental Services.

Rescue and Recovery Procedure

Rescue and recovery of an animal must be supervised by the Environmental Services Department in consultation with the Corporate Manager of Wildlife and Biodiversity and Freeport-McMoRan Legal unless the animal's presence represents an immediate threat to health and safety. In such cases, the area supervisor should thoroughly document the circumstances of the death and the reason for the action. Documentation of the location, appearance, and the testimony of any witnesses to the incident should be recorded. If removal is necessary for the health and/or safety reasons, movement should be limited (i.e. to the side of a road).

Need additional information?

Refer to BMP 600 or contact a member of FMSI Environmental Services-**Date:7/15/2024 Revision: 0**
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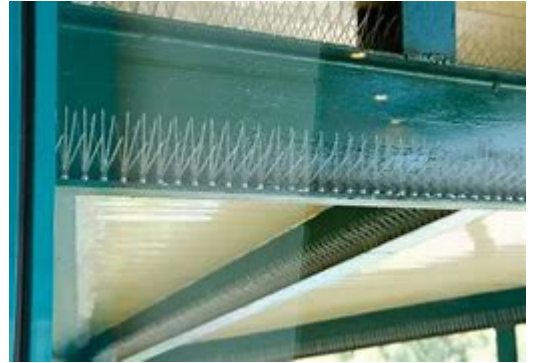
BMP 601 Wildlife Protection

Wildlife Protection

Wildlife is a valuable and vulnerable resource. Precautions are taken around the Freeport-McMoRan Safford Inc. mine to prevent wildlife related incidents, injuries, or mortalities. These precautions Freeport McMoRan take are by following Federal and State regulations, as well as an FMSI Wildlife Management Plan.

Protecting Measures for Birds

- Bird deterrents such as flash strips, monofilament wire, owl or hawk decoys, and noise generation to deter from landing and nesting on process ponds, tanks, and buildings.
- Leach stockpiles will be stacked in a fashion to minimize ponding or pooling of process solution.
- Nesting surveys will be considered in all areas of new mine disturbance.
- Discovery of an active nest should be immediately reported to Environmental personnel.



Protection of Terrestrial Wildlife and Big Game

- Speed limits established as necessary to minimize wildlife/vehicle collisions.
- Chain link fencing has been installed around certain process ponds to minimize potential impacts to terrestrial wildlife species.
- Employees must not feed or otherwise attract wildlife into the active area of the mine and processing facilities.



Coyote Management

Coyotes are naturally reclusive animals and tend to avoid human contact, so in most cases they will retreat when spotting a human. But some coyotes have adapted to living near the mine and approach people when enticed with food or other incentives. These coyotes should be given a clear message that they are not welcome to approach humans. Hazing is a method that makes use of deterrents to move an animal out of the area or discourage an undesirable behaviour. Some methods of hazing include:

- Yelling and waving your arms while approaching
- Noisemakers: voices, whistles, horns, banging
- Projectiles: sticks, small rocks, etc.
- Other: water hoses, spray bottles, vinegar water

Never run away from a coyote!



Do I need to Report a Wildlife Incident?

All wildlife incidents must be immediately reported to Environmental Services. Reporting to regulatory agencies is the responsibility of Environmental Services personnel (**BMP 600 Wildlife Reporting**).



Need additional information?

Refer to BMP 601 or contact a member of FMSI Environmental Services-**Date:8/14/2024 Revision: 0**
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BMP 800 Safety Data Sheets & Product Approval

What is a Safety Data Sheet?

A Safety Data Sheet (SDS) is a standardized document that contains occupational safety and health data. A SDS includes information on chemical hazardous, chemical properties, health and environmental hazards, protective measures, as well as safety precaution for storing, handling, and transporting chemicals.

What is on the SDS?

An SDS must be in English and contain the following sixteen sections:

1. Identification
2. Hazard(s) Identification
3. Composition/Information on Ingredients
4. First-Aid Measures
5. Fire-Fighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Controls/Personal Protection
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicological information
12. Ecological Information
13. Disposal Considerations
14. Transport Information
15. Regulator Information
16. Other Information

HALLIBURTON

SAFETY DATA SHEET
QUIK-GEL®

Product Trade Name: QUIK-GEL®
Revision Date: 02-Apr-2015
Revision Number: 18

1. Identification

1.1. Product Identifier
Product Trade Name: QUIK-GEL®
Synonyms: None
Chemical Family: Mineral
Internal ID Code: HMO03747

1.2 Recommended use and restrictions on use
Application: Viscoifier
Uses Advised Against: No information available

1.3 Manufacturer's Name and Contact Details
Manufacturer/Supplier: Safford Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fourxchem@halliburton.com

1.4. Emergency telephone number
Emergency Telephone Number: (281) 575-5000


2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Carcinogenicity	Category 1A - (H350)
Specific Target Organ Toxicity - (Repeated Exposure)	Category 1 - (H372)

2.2. Label Elements

Hazard Pictograms



Signal Word: Danger

Hazard Statements: H350 - May cause cancer
H372 - Causes damage to organs through prolonged or repeated exposure

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What do I do when I want to purchase a product?

- Find an SDS for the product and send it to your site admin. They can then search in the database if the product is approved for the Safford site.
- **If product is not listed as approved, you cannot purchase or use the product.**
- If product is not present in the database, you must submit a product Approval Request (SDS Product Approval Form) and SDS to your department Clerical Staff.
- Department Clerical Staff will submit the product approval request electronically utilizing the MRAP process in the Sphera SDS Database.
- The product must then first be approved by Safety and then by Environmental.
- If approved, the product is then entered into the database for use on site.

Do Contractors need to get approval?

Yes, all contractors must submit a product approval for any new products to be used for a job.

Guidance for Health & Safety review, as well as Environmental review of product approval request can be found on BMP 800.

Need additional information?

Refer to BMP 800 or contact a member of FMSI Environmental Services-**Date:7/15/2024 Revision: 0**
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BMP 901 Small Wheel Vehicle Wash

Purpose

This document provides guidelines for FMSI employees to use the small vehicle wash.

What do I need to know to use the wheel wash?

- No task-specific PPE required
- Vehicle must meet the following criteria:
 - All grease, lubricant, or oil containers must be secured and lidded.
 - Vehicle does not exceed 8 feet in width or have objects protrude past 8 feet in width.
 - Truck bed must not have loose items such as rags, trash, gloves, etc.
 - Only FMSI vehicles and FMSI contractor vehicles. **NO PERSONAL VEHICLES.**
 - Obey signage.
- Slowly drive up to the wheel wash.
- Make sure all windows are rolled up.
- Align front tires with wheel tracks in the wheel wash bay.
- Slowly drive on the wheel wash ramp (less than 5 MPH).
Note: The wheel wash will be automatically activated
- Turn on windshield wipers. **CAUTION: LIMITED VISIBILITY**
- Continue through wash to designated stop area.
- Stop in designated area for a minimum of 15 sec to allow for drip dry.



Need additional information?

Refer to BMP 901 or contact a member of FMSI Environmental Services—**Date:7/15/2024 Revision: 0**
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BMP 902 Management of Change

Management of Change

This procedure is to establish a means to evaluate process changes to ensure compliance with legal and other requirements, as well as identification of any potential issues regarding safety, environmental, purchasing, maintenance, etc. The Reviewing Team will assist site departments and/or divisions with acquiring the necessary permits, identification of any appropriate controls/procedures, or guidance as required.

If you answer any questions in the checklist with YES or Don't Know (D/K), the MOC approval process must be utilized. If all questions are answered NO, normal processes and approvals are deemed appropriate and an MOC is not required.

Technology	Will this change introduce new technology to the facility or process?	
Equipment	Will this change introduce new equipment to the facility or process?	
	Does this change fail to comply with any codes or regulations?	
Facilities	Will this change introduce a new type of facility or process to the company?	
Instrumentation and Control	Will this change introduce new instrumentation or control schemes to the facility or process?	
Materials of Construction	Will this change introduce materials of construction that are different from the ones currently being used?	
Construction Process	Will this change introduce a new construction process to the facility or process?	
Operating Process Conditions	Could this change lead to process conditions that are outside the parameters of the current operating standards?	
	Could this change affect future capacity increases?	
Operating Procedures and Documentation	Will this change make anything in the current operating procedures, drawings, permits or other documentation incorrect or no longer applicable?	
Chemicals	Will this change introduce or delete any chemicals to the facility or process?	
	Will this change modify the composition or quantity of any raw material, produced fluids, process additives, by-products, or waste products in the facility or process?	
Product Specifications	Could this change impact the specifications, composition or quantity of any products produced at the facility or process?	
Design Inventories	Will this change increase or decrease the quantity of any stored chemical on the facility?	
Process Design	Will this change increase the consequence of a process upset?	
	Will this change increase the likelihood of a process upset?	
	Does this change increase the level of risk?	
Mechanical Design	Will this change increase the consequence of a process upset?	
	Will this change increase the likelihood of a process upset?	
	Does this change increase the level of risk?	

Need additional information?

Refer to BMP 902 or contact a member of FMSI Environmental Services-**Date:6/12/2024 Revision: 0**
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BMP 903 Drilling Activities

What are the general requirements?

- Green stake permits are required for all activities. **(see BMP 902)**
- Minimize vegetation removal by avoiding large trees and leave rootstock in ground to assist with stabilization and re-generation.
- If topsoil removal is necessary, remove it separately and stockpile it on the pad for re-spreading on completion of the drilling program.
- Avoid pushing excavated material down steep slopes from which it cannot be readily recovered. Salvaged soils should be used to reclaim hard/bare rock areas, which cannot support vegetation.
- The use of tracked drill rigs is strongly recommended at sites with steep terrain.
- Good Housekeeping is required to be maintained at all times. **(see BMP 318)**

Access Roads

- Utilize existing access roads as much as possible.
- For new roads, a Green Stake must be issued prior to work starting.
- Conduct site walks to ensure the best routing of access roads.
- When possible, use overland travel for access to drill sites.
- Safety berms must be installed.
- Keep roads at manageable grades.
- Maintain proper drainage/erosion controls; see BMP 211 for more information.

Drill Sumps

- Drill sumps should be designed to hold water and cuttings from the hole to be drilled
- Drill sumps should be lined unless explicit permission is received from Environmental Services to not do so.
- Drill sumps should be backfilled with the excavated material and reclaimed with stored topsoil.
- Drill sumps should be allowed to dry prior to being backfilled.

Sump Fencing

- Once drilling has ceased and the sump is left to dry, livestock panels ranging from 10' to 16' long and 5' tall with 6 bars across or other designs approved by Environmental Services, will be utilized.
- Fencing must encircle the entire sump.
- T-posts or other anchors must be utilized to stabilize the fencing as necessary.
- All drill sumps must be fenced following drilling to prevent livestock and other large animal access until they have dried and have been backfilled. Fences must be inspected and maintained.

Drill Pad

- Drill pads and benches are to be constructed with a minimum of surface disturbance. When drilling is complete, pads should be reclaimed in such a way as to promote re-vegetation and prevent erosion.
- Determine the minimum area necessary for the work to be carried out safely.

Drilling Fluids, Chemicals, Amendments and Fuel

- SDS Approvals -- reference BMP 800
- Storage -- reference Housekeeping BMP 318
- Fuel Tanks -- All fuel tanks must be double walled. No temporary secondary containments will be allowed.

Well and Drill Hole Construction and Abandonment Specifications

- All wells and piezometers must meet minimum construction standards as outlined in State of Arizona Department of Water Resources Statutes and Rules Governing Minimum Well Construction Standards and the Licensing of Well Drillers (latest revision).
- All drill holes must be abandoned per standards prescribed above prior to the rig moving off the drill site.
- All wells that are to be abandoned should also be abandoned per standards prescribed above.

Permitting

- All drilling on public lands must be permitted through the appropriate land management agency.
- All wells must be approved through Arizona Division of Water Resources (ADWR).
- All wells that are to be abandoned require a Notice of Intent to be sent to ADWR.

Need additional information?

Refer to BMP 903 or contact a member of FMSI Environmental Services - **Date: 11/1/2023 Revision: 0**
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BMP 904 Light Pollution Mitigation

What is Light Pollution

Light pollution is the brightening of the night sky caused by man-made sources. This can have a disruptive effect on natural cycles in an ecosystem and inhibit the observation of stars and planets. It can consist of several elements such as Light Trespass, Glare, and Sky Glow.

What are Sources of Light Pollution at FMSI?

Light pollution can be found in various portions of the mining process. Drills and shovels operating at night are a stationary form of light. Stationary sources of light also include lighting from parking lots, buildings, and plant infrastructure. Haul trucks and light vehicles operating at night are a source of mobile light.

What Kind of Lighting Best Reduces Light Pollution?

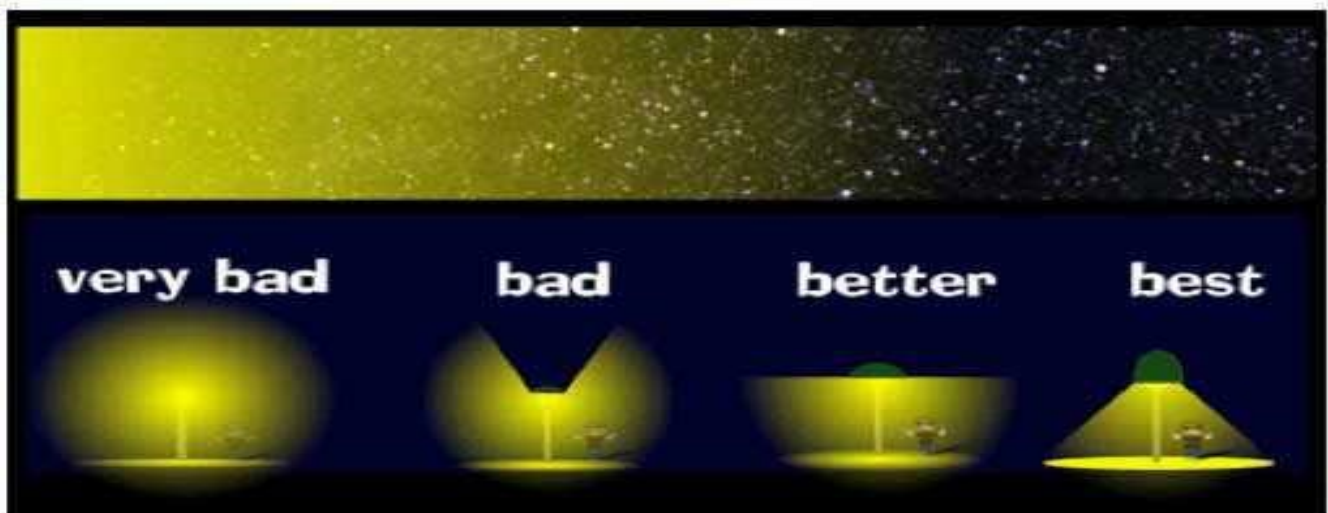
Use of low-pressure sodium (LPS) and high-pressure sodium (HPS) lights have been shown to greatly reduce sky glow compared to similar LED lights because of their amber light spectrum (2,200K).

Therefore, LPS and HPS lights may continue to be used around FMSI property where applicable and deemed safe. A light spectrum of 3,000K and greater should **not** be used in outdoor lighting applications.

Anything above 3,000K will cast a neutral to blue light, causing higher than normal light scatter in the atmosphere creating sky glow. The optimal light spectrum range to ensure both safety while minimizing light pollution is between 2,200K to 3,000K (Warm White, 3,000K being the most optimal). All lights at FMSI should employ all necessary controls to decrease the effect of light pollution on the environment.

How do I Properly Shield Lights?

The image below shows how to properly shield lights and the effect from doing so. Lights should be completely shielded to allow light only on the area that needs to be lighted. By doing this, lights can be used more efficiently by not allowing any light to go to waste and greatly decreasing light pollution.



What Controls can be used to Mitigate Light Pollution in Active Mining Areas?

- Employ well shielded and aimed light sources
- Avoid directly pointing lights at the face of a wall to prevent deflection of light
- Place light overhead of the place where work is being conducted as much as possible
- Use the smallest light source allowable to prevent over lighting
- Turn off all un-needed light sources
- For light plants – at a minimum, face all light plants away from the town and Mt. Graham

Need additional information?

Refer to BMP 904 or contact a member of FMSI Environmental Services-*Date:6/12/2024 Revision: 0*
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