WASTE MANAGEMENT PLAN

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May 2014

Doc Owner: Environmental Staff
Doc Class: EMS

Climax Molybdenum
A Freeport-McMoRan Company

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REVISION HISTORY

Revision Date	Completed By	Summary of Revisions or Record of Review
May 2010	M. Hamarat, M. Siron	Original issue of document.
May 2011	A. Moran	Review of document
Aug 2011	M. Siron	Added a new PCB collection area to 9a Substation , mine
Dec 2011	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine.
Feb 2012	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine.
May 2012	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine.
Nov 2012	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine.
Nov 2012	T. Haynes	Annual Document Review
Dec 2012	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine.
Dec 2012	G Clothier	Per C011, added Used Oil Analysis requirements p.8.
Apr 2013	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine.
May 2013	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine. Added URAD aerosol cans.
July 2013	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine. Added 7065 Crush & Convey Shop and aerosol to 8100 Pump Shop.
Sept 2013	M. Siron	Minor revisions of mine waste table
Nov 2013	T. Haynes	Annual Document Review
Dec 2013	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine. Removed URAD contractor and 93AC.
May 2014	T Haynes	Annual Document Review
July 2014	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine. Added URAD contractor, 7755, and 93AC.
Nov 2014	M. Siron	Henderson Mine Waste Accumulation Areas table updated for the mine. Removed URAD contractor.
Dec 2014	A. Parmet	Revision of Medical Waste Management Section
Mar 2015	M. Siron	Minor revisions of mine waste table

1.0 INTRODUCTION

Climax Molybdenum Company's Henderson Mine and Mill (Henderson) generates various types of wastes in connection with its mining, milling and associated operations. This Waste Management Plan serves as a guide to ensure the proper management, including disposal, of wastes generated by Henderson. This Plan is not intended to be relied upon in place of applicable regulatory or other legal requirements.

This Plan serves the following primary objectives:

- **Proper Disposal of Regulated Wastes -** Various wastes generated by Henderson meet regulatory definitions that trigger prescribed waste management requirements. Under these rules, Henderson is obligated to manage affected wastes in accordance with the applicable rules. One such example includes the hazardous waste rules. Applicability of the hazardous waste rules, and others, are discussed in more detail below.

- **Minimize Exposure to Environmental Liability -** The intent behind waste management procedures at Henderson extends beyond complying with applicable requirements. For instance, Henderson is focused on minimizing its exposure to potential environmental liabilities. Avoiding liabilities related to environmental contamination and associated clean up obligations is an important consideration at Henderson, and reflected in how it manages waste. Many of the waste management efforts at Henderson are aimed at minimizing exposure to such liabilities, rather than adhering to specific legal requirements.

Waste Minimization - Henderson is committed to reducing the quantity of hazardous and other waste it generates where practicable. Waste recycling is a key component of Henderson's commitment to pollution prevention and waste minimization. To the extent practicable Henderson strives to recycle as many materials/wastes as possible. All recycling is managed through the Environmental Department to ensure that the recycling is effective and complies with all applicable requirements and restrictions. These goals are reflected in the Waste Minimization Goal Statement below.

Waste Minimization Goal Statement

This statement serves as a waste minimization goal statement for Climax Molybdenum Company.

It is the goal of Climax Molybdenum Company to reduce hazardous and non-hazardous waste generation at all Colorado Operations facilities. This goal will be met through continuous training, routine inspection, operational interface, implementation of programs attendant to new or changing regulation, planning of new activities, and persistent evaluation of waste management practices. Several waste minimization methods have been initiated and are outlined below. Additional goals are outlined in the Climax Molybdenum Company Management and Procedures Manual, which serves as both company policy and objective for the management of wastes and materials on site.

- Lead-acid batteries are traded in at the warehouse for recycling. Fluorescent tubes and vapor light bulbs are also collected for recycle.
- Operators are asked to confer with the environmental department prior to purchase of a new product that may result in the addition of a new or increased volume of waste.
- Every effort is made to completely use products purchased, the ordering of materials in quantities above normal use is discouraged to avoid expiration or putrefaction of product.

- Used oil is delivered to the used oil tank; suspect oils are tested prior to delivery to the used oil tank using kit type chlorine detectors; and used oil is recycled where possible.
- Training has been provided to facilitate the identification of hazardous wastes to prevent mixing of hazardous waste with other wastes, thereby increasing decreasing hazardous waste generation.
- Scrap metal is accumulated for recycle.
- Goals have been established to route non-hazardous waste streams such as tires, empty and drained barrels, oil filters, and aerosols to consolidation areas for recycle.
- A consolidated recycling program takes advantage of recyclable good, including paper, flat cardboard, aluminum and plastics. Additional recycling outlets for corrugated cardboard and wood is also made possible through this program.
- Employees are encouraged to target specific work areas for housekeeping and cleaning opportunities that result in reducing the overall volume of product on site.
- SPCC Plan provides for the comprehensive management of materials on site and is in part intended to minimize the amount of product that would otherwise ultimately be classified as a waste material.

The starting point for the proper management of waste generated at Henderson is to properly categorize the waste. Different wastes are subject to varying levels of regulation, pose a variety of environmental contamination risk, and are managed accordingly.

Wastes generated at Henderson fall within the following five categories, as described in Sections 3.0-8.0 of this Plan:

- Solid (non-hazardous) Waste/Trash
- Universal Waste
- Special Waste
- Hazardous Waste
- Petroleum Contaminated Soil (PCS)

Training requirements - Henderson personnel are trained on a broad range of environmental topics, including the topics outlined in the waste management system. **Environmental training** is conducted for all new employees during the required 40-hour MSHA initial training, and annually either during the 8-hour refresher training or during separate environmental training conducted for all Henderson employees.

2.0 CHEMICAL PURCHASING & DISPOSAL

2.1 Chemical Purchasing

Henderson utilizes various methods to characterize the waste it generates, including sampling/analysis and reliance on generator knowledge. Henderson's New Product Approval Procedure and the ESS Waste Module (Characterizations) are important components of this waste characterization process. This procedure applies to all chemical purchases, including those made through the warehouse, direct orders and by purchase cards. The Environmental and Safety Departments will review the chemical and its use and advise the receiving departments of applicable management and disposal requirements. If it is discovered that the proper procedure is not followed, chemicals brought on site will be "quarantined" in the warehouse pending the required review.

The product approval procedure requires that new products brought on site be evaluated by the Environmental Department to, among other things, properly characterize waste that may be generated from the use and disposal of the product. Information generated from this characterization process is entered into the Henderson Waste Determination Database, which includes details about the waste such as Resources Conservation Recovery Act (RCRA) waste code designations. It is important that new chemicals go through this review to ensure that all wastes generated at Henderson are properly characterized.

Henderson utilizes 3E Company's 1-800 MSDS Compliance System. All employees have been trained on how to use the system during initial MSHA training, as well as during annual MSHA refresher training. Refer to the Safety or Environmental Departments for more information.

To the maximum extent practicable, Henderson will limit the purchase of chemicals that, when disposed of, may generate hazardous waste. Particular attention will be given to chemicals that generate listed hazardous wastes. These chemicals will be purchased only when no reasonably available alternatives exist.

To the maximum extent practicable, chemicals will be purchased in totes, drums or containers that can be returned to the vendor. Additionally, preference will be given to larger-sized containers in an effort to reduce the number of chemical items handled and related risks of spillage.

2.2 Disposal of Unused Chemicals

The preferred approach to managing unused chemicals is to find a use for them. So long as a chemical is used for its intended, or a legitimate alternative purpose, it is not subject to waste regulation. Unused chemicals, both solids and liquids that cannot be used must be properly characterized prior to disposal. Regardless of their composition, free liquids may not be disposed of in general trash sent to non-hazardous waste landfills. Debris, including environmental media contaminated with these materials must be managed in accordance with the PCS procedures specified in Section 8.0 of this Plan.

3.0 SOLID (NON-HAZARDOUS) WASTE

Solid waste (trash) is comprised of waste that is subject to relatively little regulation and poses minimal environmental contamination risk. Trash includes such items as office waste and other materials that are appropriate for disposal in dumpsters that are disposed of in non-hazardous solid waste landfills.

Routinely generated non-hazardous solid waste, including lunchroom wastes, paper, non-recyclable scrap metal (including non-returnable drums that have been crushed), demolition debris (e.g., scrap wood, non-recyclable scrap metal, concrete), and maintenance shop wastes (e.g., drained and crushed oil filters and floor clean-up) will be placed in the trash as non-hazardous municipal waste.

The Henderson Mill operates an onsite landfill, which is governed by the Colorado Division of Reclamation, Mining and Safety, under Henderson's Mined Land Reclamation Permit. The landfill is solely used for the disposal of non-hazardous debris generated at the site, including concrete, mill spill (crushed material from the mill circuit), and uncontaminated excavation spoils. General non-hazardous waste material is disposed of in the appropriate roll-off dumpsters. Hazardous wastes and free liquids are not allowed to be disposed of in the landfill or in roll-off dumpsters. Refer to Section 11.0 or consult with the Environmental Department for additional details requiring disposal restrictions for the landfill.

Sludge generated at the Urad industrial water treatment plant are managed in surface impoundments at the Urad site and disposed of as necessary at an appropriate landfill. As required under the Solid Waste Rules and the landfill's permit and associated waste management procedures, the sludge is subject to analytical and profiling requirements prior to disposal.

Mixed Household and Office Recyclables

Mixed household and office recyclables include paper, miscellaneous cardboard, glass, plastic containers, aluminum, steel, and tin. These materials must be segregated from other trash according to the Recycling Procedures found on the Environmental SharePoint Site.

Used printer and copier toner cartridges are also collected in separate containers and returned to the vendor or otherwise recycled.

Corrugated Cardboard

Corrugated cardboard is segregated from mixed recyclables for compaction and bailing, prior to disposal in the appropriate containers.

Wood

Various types of wood waste are generated at Henderson, including pallets, packaging materials, mine structural workings, landscaping and haulage system railroad ties and other demolition materials. Pallets that have not sustained excessive damage are reused. Wood that is to be disposed of is placed in the appropriate roll-off container after proper characterization. It is the preference of the recycler that the wood does not contain large pieces of metal (i.e., spikes, rebar, etc.)

Scrap Metal

Henderson ships scrap metal waste offsite to be recycled for salvage value. Fluids including lubricants, fuels and refrigerants must be separated from scrap metal prior to placement in scrap metal accumulation areas. Scrap metal should not be disposed of in the landfill or in trash roll-off containers, particularly waste that may display hazardous characteristics such as welding rod.

The Environmental Department must be notified of pipeline or other metal equipment that may include the presence of technically enhanced naturally-occurring radioactive materials (TENORM). This is typical of equipment associated with process circuits, underground water conveyances and mill-related slurry conveyance lines (e.g. flotation cells, pipelines). Scale and buildup in this equipment is commonly suspect for TENORM. All efforts shall be made to remove this foreign matter from metal destined for offsite disposal. Additionally, any metal that is characterized as TENORM shall be disposed of at an approved low-level radioactive disposal facility (e.g., Clean Harbors - Deer Trail Facility, CO)

Used Vehicle Tires

Used vehicle tires are generally returned to the vendor for recycle. To the extent possible, vehicle tires are to be purchased only from vendors who will accept exchanges of used tires for new tires purchased. Used vehicle tires that will be returned to the vendor must be stored in a well-organized manner until returned to the vendor or shipped off site for disposal. Tires that cannot be returned to the vendor will be disposed of in an approved industrial landfill.

Empty Drums

Metal drums received on the property are generally returned to the vendor, sent to a drum recycler or otherwise recycled for scrap metal recovery. Empty metal drums are taken to the Oil Storage Building and placed in designated areas for return to the vendor or other recycling. Drums are considered to be empty only after they have been emptied as described in this Plan. Drums must be stored in a well-organized manner and either covered or otherwise arranged to prevent collection of rain water and snow.

4.0 UNIVERSAL WASTE (40 CFR 273)

One category of hazardous waste, known as "universal waste," is subject to reduced regulatory requirements under Title 40 of the Code of Federal Regulations (40 CFR), Section 273. The universal waste rules provide an alternative set of management standards that generators may choose to follow in place of the hazardous waste rules. Universal wastes are generated from a broad range of generators and processes. The Universal Waste Rule provides an alternative set of reduced management standards that the generator can follow instead of the full hazardous waste requirements. This rule was designed to reduce the regulatory burden on non-residential entities that generate these wastes and to encourage recycling, while at the same time reducing the amount of hazardous waste items illegally sent to municipal solid waste landfills, thus reducing a potential threat to public health and the environment. The universal waste rules only apply to these wastes if they would otherwise be regulated as a hazardous waste, either characteristic or listed. The Colorado hazardous waste rules include the following universal wastes generated at Henderson:

- Batteries
- Aerosol cans
- Mercury-containing devices
- Lighting wastes (lamps)
- Electronic wastes

An assessment of universal waste management practices is conducted quarterly to ensure universal waste is being managed properly and in accordance with applicable regulations. The Henderson Mine and Mill Universal Waste Inspection Forms summarize applicable criteria and are used to document the inspection.

Small quantity handlers of universal waste are required to inform all employees who manage universal waste about the proper handling and emergency procedures appropriate to the types of universal waste at the facility.

Universal waste can be accumulated for up to one year from the date it became a waste. The item, closed container, or sufficiently contained area is to be marked as universal waste with the earliest date that waste began accumulating in that container or area.

4.1 Mobile Equipment Lead-Acid Batteries

Lead-acid batteries from mobile equipment are managed under the universal waste regulations, and as such must be handled, stored and recycled appropriately. The following procedures must be followed:

- Used batteries are managed under the universal waste regulations.

- To the extent practicable, mobile equipment lead-acid batteries are to be purchased only from vendors who will accept exchanges of used batteries for new batteries purchased.

- Used lead-acid batteries are to be returned to the battery vendor on a one-for-one trade for new batteries. These batteries will be sent back to a manufacturer for regeneration or reclamation.

- Prior to return to the vendor, used lead-acid batteries will be stored in the Warehouse (mine) or hazardous waste building (mill) in a well-organized manner that prevents the release of any hazardous constituents to the environment.

- Warehouse personnel will maintain a log of vehicle and forklift lead-acid battery requisitions and record shipment of BO batteries to document that all batteries are returned to the vendor for regeneration or reclamation.

- Lead-acid batteries that are not returned to the vendor for regeneration or reclamation must be managed as hazardous or universal waste.

4.2 Aerosol Cans

Aerosol cans are managed under the universal waste regulations. Aerosol cans are left intact and the can and contents are disposed of in designated waste aerosol can containers. All aerosol cans are managed per the Aerosol Can Management Procedure.

4.3 Lamps

Spent lamps are managed under the universal waste regulations. Many commonly used lamps contain small amounts of mercury and other metals. Such lamps include fluorescent, compact fluorescent, high-pressure sodium, mercury vapor and metal halide lamps. All lamps (including green tipped) are collected and sent off site for recycling per the Lamp Management Procedure.

4.4 Mercury Containing Devices

Mercury containing devices are managed under the universal waste regulations. Waste mercury-containing devices are commonly generated by industrial operations. Such devices include mercury thermostats, thermometers, manometers, barometers, blood pressure cuffs, electrical switches and relays, gauges and flow regulators, pyrometers, thermocouples and vacuum pumps. As such, all mercury containing devices are collected and sent off-site for recycling.

4.5 Electronic Waste

Electronic waste is managed under the universal waste regulations. Many electronic devices contain individual components made with hazardous constituents, primarily heavy metals. Cathode ray tubes (CRTs) found in color televisions and color computer monitors contain significant amounts of lead. Printed circuit boards and complex circuitry found in computers and other electronic devices may contain lead, chromium, and silver and may exhibit the characteristic of toxicity. As such, electronic waste is collected and shipped off for recycle.

5.0 USED OIL AND FILTERS

Used Oil is a common waste stream associated with many industrial operations. If disposed of using traditional means, used oil would normally be regulated as a hazardous waste. However regulators have developed management standards for used oil that, when RECYCLED, preclude used oil from being regulated as a hazardous waste. This provides Henderson with a set of reduced management standards to follow instead of the full hazardous waste requirements. This rule was designed to reduce regulatory burden and to encourage recycling, while at the same time reducing the amount of hazardous waste illegally disposed of, thus reducing a potential threat to public health and the environment. Additional instruction for the collection, storage, labeling, analysis and proper recycling of used oil is included in the Used Oil Management Procedure.

5.1 Used Oil (40 CFR 279)

Used oil, greases, fuels and other petroleum products are sent off site for recycle, typically to be burned for energy recovery. Such materials that meet the definition of used oil must be managed in accordance with the used oil rules, which also prescribe procedures associated with used oil filters. Unknown materials must be properly characterized prior to disposal. Debris, including environmental media, contaminated with these materials must be managed in accordance with the PCS procedures specified in Section 8.0 of this Plan.

- Used oil that cannot be recycled will be characterized and, depending on the results, managed in accordance with the procedures for non-hazardous or hazardous waste specified in this Plan.

- To the extent possible, used oil will be recycled either by off-site processing to generate a useable product or burning for legitimate energy recovery. The Environmental Department will work with approved vendors to determine the appropriate disposition of used oil.

- Used oil, including oil that is recycled as well as oil that must be disposed of, will be placed in acceptable containers and stored in the Hazardous Waste 180-day accumulation area or used oil storage area, as appropriate.

All containers used to capture, contain, store, transport or handle used oil generated by Henderson must be labeled with the words “USED OIL”.

All used oil shall be transferred to the used oil storage tank where it will be hauled away by an approved used oil handler. The used oil storage tank must be labeled “USED OIL” and the fill pipe must be locked to prevent unauthorized disposal.

The used oil handler must routinely/periodically perform an industry-approved instant clearance analysis (e.g., HydroChlor or Q-4000) to check for any contamination such as chlorinated solvents. They then must document the results on their documentation such as a Bill of Lading or Manifest. The Mine and Mill should do a waste characterization analysis on an annual basis.

Refer to Table 1 - Henderson Mine Waste Accumulation Areas and Table 2 - Henderson Mill Waste Accumulation Areas, for the specific locations where used oil is managed at the Mine and Mill.

5.2 Used Oil Filters (40 CFR 261.4(b)(13))

Used oil filters must be managed using one of the following methods:

- Puncturing the filter anti-drain back valve or the filter dome end and hot draining;
- Hot-draining and crushing;
- Dismantling and hot-draining; or
- Any other equivalent hot-draining method which will remove used oil;
- Drained oil filters will then be recycled (metal filters) or disposed of properly;
- Drumming of intact filters and remnant oil for disposal by approved used oil handler

*"Hot Draining" means that the oil filter is drained at or near engine operating temperature and above room temperature (60°F). EPA recommends a minimum 12-hour hot-drain time for punctured or pierced used oil filters. Drained oil filters will then be recycled (metal filters) or disposed of properly.

Refer to Table 1 - Henderson Mine Waste Accumulation Areas and Table 2 - Henderson Mill Waste Accumulation Areas, for the specific locations where used oil filters are managed at the Mine and Mill.

Table 1
Henderson Mine Waste Accumulation Areas

Location	Haz Waste (SAA 90/180/270 -day storage)	Universal Waste	Recycled Waste	PCB Waste	Used Oil & Oil Filters
Hazardous Waste Storage Building	90/180/270 -day storage area	All	batteries	1-year storage area	Used Oil
Surface Maintenance Shop		1-Aerosol	2-TF Units		Used Oil and Filters
Main Dry			1-Batteries (all kinds)		
Main Office		Electronic Waste			
8100 Pump Station		1-Aerosol	1-TF Unit		
LA Surveyor Shop		1-Aerosol			
PC1/PC2		1-Aerosol			
7755 trash cutout, 515 SW		1-Aerosol			
7625 Station		1-Aerosol			
7700 Lube Bay		1-Aerosol	2- TF Units		Used Oil & Filters

Location	Haz Waste (SAA / 90/180-day storage)	Universal Waste	Recycled Waste	PCB Waste	Used Oil & Oil Filters
7700 Shop		1-Aerosol	4- TF Units		Used Oil and Filters
7700 Warehouse			1-Pb Acid Batteries		
7500 Shop		1-Aerosol	3- TF Units		Used Oil and Filters
7500 Electrical 2-bay		All except aerosols		30 day temporary storage	
7065 Truck Shop		1-Aerosol	1- TF Unit		Used Oil & Filters
7065 Lube Bay			1- TF Unit		
7065 Crush & Convey Shop		1-Aerosol	1- TF Unit		Used Oil & Filters
Crusher Lube Room		1-Aerosol			
Reclaim		1-Aerosol			
7175 refuge		1-Aerosol			
7175 Shop		1-Aerosol	4- TF Units (1 aqueous), 1 TF unit in lube bay		

Table 2
Henderson Mill Waste Accumulation Areas

Location	Haz Waste (SAA 90/180/270 -day storage)	Universal Waste	Recycled Waste	PCB Waste	Use Oil & Oil Filters
Car Barn (Loci Shop)	1-Solvent Rags	1-Aerosol	1- TF Unit		1-Used Oil
Hazardous Waste Bldg	90/180/270 -day storage area	1-Hg Lamps 1-Computers	1-Batteries (Pb Acid)	1-Small PCB Capacitors	
Mobile Equipment Shop	1-Solvent Rags	1-Aerosol	1- TF Unit 1-Tires		1-Used Oil and Filter
Pond Shop		1-Aerosol	1- TF Unit		
Barge Shop		1-Aerosol			
PC2/PC3		1-Aerosol			
Mill Maintenance Shop	1-Solvent Rags	1-Aerosol 1-Hg Lamps	1- TF Unit		
Primary Grinding Deck		1-Aerosol			
Rougher/Cleaner Deck		1-Aerosol			
Lab	1-Acetone 1-AA Machine Effluent				
Shop Warehouse			1-Batteries (dry cell)		
Mill Office Parking Lot			1-Scrap Iron 1-Mixed Recyclables 1-Cardboard 1-Pallets		

6.0 SPECIAL WASTE

Special waste includes materials that do not meet the regulatory definition of a hazardous waste, which is described in detail in Section 7.0. What distinguishes special waste from trash is that it is not suitable for disposal in the dumpster. The reasons to follow special handling procedures for special waste follow.

6.1 Poses Potential Risk of Environmental Contamination

As referenced above, Henderson waste management procedures are based on more than complying with applicable legal requirements. Henderson takes its commitment seriously to protect the environment and minimize the risk of environmental contamination. Certain wastes, although not subject to prescriptive waste management requirements, pose such risks, and warrant adherence to special waste handling efforts.

Various industrial chemicals would be examples of such special wastes. Although these chemicals may not meet regulatory definitions that would trigger hazardous waste or other regulation, they may contain ingredients that pose environmental risks if not properly managed. Additionally, liquids pose the increased risk of environmental contamination because of their mobility in the environment. It should be noted that the solid waste rules prohibit the disposal of free liquids in landfills.

6.2 Regulated by Specific Rules

Although the hazardous waste rules are an important set of requirements applicable to waste management at Henderson, numerous other regulatory programs also potentially apply to wastes generated. Following are examples of wastes historically generated at the sites that trigger regulatory requirements outside of the hazardous waste rules.

PCBs

Polychlorinated biphenyls or "PCBs" have been used extensively in electrical and other industrial equipment because of their heat resistant and fire-retardant characteristics. In recent years EPA and other entities have concluded that PCBs exhibit characteristics that are toxic to the environment. In an effort to minimize related risks associated with these toxic characteristics, Henderson has removed/replaced the bulk of its PCB-containing equipment. Henderson still uses certain equipment that contains PCBs, primarily capacitors at the Mill and small ballasts in various lighting fixtures. Any waste generated at Henderson that has the potential of containing PCBs is managed in strict accordance with EPA's PCB rules, under the Toxic Substances Control Act (TSCA). All PCB waste generated at Henderson is shipped for disposal to permitted PCB disposal facilities. In no case are untreated PCB-containing wastes disposed of in non-hazardous waste landfills.

Medical Waste

Medical waste is subject to regulation under the Colorado Solid Waste Rules. Examples of medical waste include:

- Human blood
- Human tissue
- Human body parts
- Human blood products and body fluids

- Contaminated sharps
- Waste pharmaceuticals

The handling and disposal of medical waste at Henderson is managed in accordance with the Henderson Medical Waste Management Plan.

Asbestos (40 CFR 61.140-40, 61.157)

Asbestos is also subject to special waste handling procedures prescribed in the Colorado Solid Waste Rules. Asbestos containing materials (ACMs) shall be handled and managed in accordance with the Henderson Mill – Asbestos Operations and Maintenance Plan and the Henderson Mine – Asbestos Operations and Maintenance Plan. Typically, asbestos waste is generated during structural abatement projects. Since Henderson personnel lack the necessary licensing/training requirements applicable to such abatement activities, the sites rely on external contractors to perform such work and manage associated wastes. Asbestos wastes are generally disposed of offsite at specially-permitted facilities. Asbestos is only disposed of in the Mill landfill in strict accordance with applicable solid waste regulatory requirements.

Refrigerants

Henderson utilizes various types of equipment that contain refrigerants used for cooling purposes. Examples include refrigerators, drinking fountains, beverage machines and mobile equipment/stationary air conditioning units. These refrigerants are potentially subject to ozone-depleting substance (ODS) regulations, which impose strict requirements pertaining to required recycling of ODS and prohibitions on venting/disposal to the atmosphere. Prior to disposal/recycle, this equipment must be evacuated of any refrigerant by an approved and licensed refrigerant recycler. The equipment must be tagged as having been evacuated of refrigerant prior to accumulation for disposal or recycling. Additionally, appropriate records must be maintained to document that the refrigerant has been properly recycled. Refrigerant use at Henderson Mine and Mill shall be handled and managed in accordance with the Henderson Mine Stratospheric Ozone Protection Program and the Henderson Mill Stratospheric Ozone Protection Program.

Radioactive

Henderson generates very little waste that displays radioactive characteristics. Most radioactive materials at the sites are components of measuring devices that are completely sealed. Certain members of the Henderson Safety Department are trained radiation Safety Officers (RSO) and are responsible for managing radioactive materials. Radioactive sources are never disposed of in non-hazardous waste landfills, and are managed in strict accordance with applicable Nuclear Regulatory Commission (NRC) and Department of Energy (DOE) requirements.

7.0 HAZARDOUS WASTE

Hazardous waste meets specific regulatory definitions and as a result is subject to extensive regulation related to generation, characterization, accumulation, storage, treatment, shipment and ultimate disposal. Due to the strict nature of hazardous waste regulation, it is critical that proper hazardous waste determinations be made, and that the applicable rules are followed. Additionally, hazardous wastes can pose significant environmental contamination risk if disposed of improperly. Untreated hazardous waste generated at Henderson is never disposed of in non-hazardous waste landfills. The definitions of and proper management of hazardous waste is described below.

7.1 IDENTIFICATION OF HAZARDOUS WASTE

7.1.1 Characteristic

Characteristic hazardous waste displays specified characteristics that are considered to pose risk to the environment or persons handling the waste. Regulated hazardous waste characteristics include the following:

Ignitability

Ignitable hazardous waste poses the risk of catching on fire or otherwise detonating. Ignitable characteristic wastes are typically characterized by a low flashpoint. The regulatory definition of ignitable hazardous waste is specified in 40 CFR 261.21.

Corrosivity

Ignitable characteristic waste is typically characterized by a low or high pH, which poses health risks to humans in case of unprotected contact with the material. Corrosive waste also poses the risk of deteriorating certain materials, including storage containers or tanks. The regulatory definition of corrosive hazardous waste is specified in 40 CFR 261.22.

Reactivity

Reactive characteristic wastes are typically characterized by their instability; certain reactive hazardous wastes may react violently when combined with other materials, including something that is usually harmless like water. Under certain conditions, reactive hazardous wastes sometimes also pose the risk of generating toxic gases. The regulatory definition of reactive hazardous waste is specified in 40 CFR 261.23.

Toxicity

Toxic characteristic wastes are typically defined by two characteristics:

- Their tendency to dissolve in relatively weak acidic solutions, and
- As a result, liberate solutions with relatively high concentrations of specified contaminants.

Typically, the starting point for identifying a toxic characteristic hazardous waste is to identify the concentration of specified hazardous ingredients in the waste. The regulatory definition of toxic hazardous waste is specified in 40 CFR 261.24.

7.1.2 Listed

A waste is regulated as a listed hazardous waste based on the:

- Product from which the waste was generated, focusing on the hazardous ingredients contained in the product, and
- The process or use of the material involved.

Listed hazardous wastes are generally regulated more strictly than characteristic wastes. One example of this stricter regulation is that often times listed hazardous wastes are regulated as hazardous regardless of whether or not they display any hazardous characteristic or the concentration of hazardous constituents. Following are the four types of listed hazardous waste.

F-List

F-list wastes include various types of materials. The category of F-list wastes most likely to be generated at Henderson is solvent wastes. F-list solvents are chemicals that have been used for solvents characteristics and contain threshold concentrations of specified chemicals. Henderson pollution prevention and waste minimization efforts have effectively minimized the amount of F-list wastes generated at the site. The regulatory definition of F-list hazardous waste is specified in 40 CFR 261.31.

K-List

K-list wastes are wastes derived from specific manufacturing activities. Henderson does not generate any K-list wastes. The regulatory definition of K-list hazardous waste is specified in 40 CFR 261.32.

P-List and U-list

This category of wastes covers commercially pure, unused listed chemicals or formulations in which the particular chemical is the sole active ingredient. Also covered are residues from these products as well as soil, water or other debris that have been contaminated by one of the listed commercial chemical products. The regulatory definition of P and U-list hazardous waste is specified in 261.33.[1]

7.1.3 Waste Characterization

Henderson will determine if solid waste generated by its operations and activities are hazardous or non-hazardous (40 CFR 262.11).

A solid waste is a hazardous waste if it is not excluded from hazardous waste regulation, and it:

- Is listed as a hazardous waste in subpart D of 40 CFR part 261;
- Is mixed with a waste listed in subpart D of 40 CFR part 261; or
- Exhibits a characteristic of hazardous waste (ignitability, corrosivity, reactivity or toxicity) as described in subpart C of 40 CFR part 261.

In order to determine if a solid waste is a hazardous waste, Henderson will:

- Evaluate the exemptions found at 40 CFR 261.2 through 261.6;
- Review the listed hazardous wastes in subpart D of 40 CFR part 261;

- Either have the waste analyzed according to the methods set forth in subpart C of 40 CFR part 261, or apply knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

Generator knowledge may be used when appropriate to characterize whether a waste is non-hazardous or hazardous. In particular, generator knowledge may be applied to characterize such materials as paper, untreated wood, concrete and food scraps as non-hazardous. In any case where generator knowledge is used as the basis for characterizing waste, appropriate documentation must be maintained.

For routinely generated wastes (e.g. waste solvent and used shop floor dry), representative sampling can be used in place of separate analyses of each individual batch of waste generated. Additional analyses must be performed if there is reason to believe that the hazardous characteristics of a particular waste differ from like waste previously analyzed.

Solvent generated from Henderson's Thermo Fluids parts washers is managed, via precedent, under Safety Kleen's approved "Continued Use Program," and, as such, the solvent is excluded from solid waste regulation. Safety Kleen's "Continued Use Program" has received written approval from EPA, Region VIII and the Colorado Department of Public health and Environment. Documentation of this approval is maintained in the Environmental Files. Refer to Table 1 - Henderson Mine Waste Accumulation Areas and Table 2 - Henderson Mill Waste Accumulation Areas, for the specific locations of these solvent units at the Mine and Mill.

Hazardous waste determinations, including the evaluation of exemptions and the application of waste listings, can be extremely complex, and may require consultation with corporate or outside environmental and/or legal personnel.

Results of waste characterizations are summarized in the Henderson Waste Determination Database. Supporting documentation is included as appropriate. Henderson waste management procedures included in this manual assume that waste materials have been properly categorized as hazardous or non-hazardous solid waste.

7.2 USE OF CHEMICALS THAT MAY GENERATE HAZARDOUS WASTE

Use of solvents that becomes hazardous waste when disposed will be minimized to the extent practicable:

- Industrial soaps will be used wherever acceptable results can be achieved.
- Where use of an organic solvent is necessary, non-chlorinated solvents with a flash point of 140°F or greater will be used.
- Non-chlorinated solvents with a flash point of below 140°F may be used if necessary to achieve acceptable results where no acceptable alternative exists.
- Chlorinated solvent may be used only when alternative cleaners and solvents do not achieve acceptable results.

Hazardous waste cannot be deliberately mixed with non-hazardous material in order to avoid hazardous waste regulation. When waste solvents that are listed hazardous wastes (40 CFR 261.30-33) are mixed with other materials, the entire mixture must be managed as hazardous waste (40 CFR 261.3(a)(2)(iv)).

With the exception of the use of Thermo Fluids solvent, CRC Natural Degreaser and CRC 226 discussed above, the mixture of any solvent used (including Carburetor Cleaner and CRC Contact Cleaner), and any

other materials (e.g., rags used to wipe off the solvent and grease or dirt, absorbent used to clean up a spill of solvent) will be considered to be hazardous waste and will be managed in accordance with the procedures found in this Plan, unless determined by Environmental Department personnel to be non-hazardous.

The use of chlorinated and/or fluorinated solvents for "spray-on and evaporate" uses such as electrical contact cleaning does not involve the generation of a waste and is not subject to regulation. However, when the same solvent is used in a "spray-on and wipe off" application, the rag used to wipe off the solvent/dirt and grease mixture must be managed as hazardous waste.

Rags or clean-up debris generated without use of chemicals that are known to generate hazardous waste, may be disposed of as solid, non-hazardous waste, so long as there are no free-flowing liquids (i.e. the waste passes the RCRA paint filter test). Consult with the Environmental Department if any questions exist regarding a chemical's potential regulation as a hazardous waste. In some cases, the waste may need to be analyzed to make a hazard determination.

7.3 EMPTYING OF CONTAINERS THAT CONTAIN HAZARDOUS WASTE (40 CFR 261.7)

The following procedure applies to all containers that hold chemicals that are regulated as hazardous waste once they become a waste. Contact Environmental Department personnel if there is any uncertainty regarding the applicability of this section.

7.3.1 Non-aerosol Containers (except acute hazardous waste)

During use, empty the container of all material by its normal means (e.g., pouring, pumping). Inspect the container to ensure that less than 1 inch or 3% by weight of the total capacity of the container remains in the container (0.3% if the container is greater than 119 gallons). If more than this amount of material remains in the container, it must be used or emptied into a satellite accumulation drum.

If the container has an inner liner, the container is empty when the inner liner has been removed, but the liner must be emptied to the same specification as described above for it to be empty.

Once emptied by this procedure, the container should be placed in the scrap metal container for recycling or disposed of as solid, non-hazardous waste.

7.3.3 Hazardous Wastes that are Compressed Gases

Henderson uses gases such as acetylene and propane products that are returned to the vendor for refilling. They may be considered to display hazardous waste characteristics of ignitability or reactivity if they are determined to be a waste. Unless containers of these waste materials are emptied through use or subsequent emptying and capture of the remaining gas, the containers must be managed as hazardous waste. Once empty, the containers can be disposed of as scrap metal. Containers of these gases are considered to be empty when the tank pressure approaches ambient atmospheric pressure.

7.4 ACCUMULATION AND PACKAGING OF HAZARDOUS WASTE PRIOR TO SHIPMENT

7.4.1 Satellite Accumulation (6 CCR 1007-3, Section 262.34(g))

Satellite accumulation areas (SAAs) are located in various maintenance shops and other locations as needed. (Refer to Table 1 - Henderson Mine Waste Accumulation Areas and Table 2 - Henderson Mill Waste Accumulation Areas for the specific locations of satellite accumulation and 180-day storage areas at the Mine and Mill.) The following procedures must be carried out for SAAs:

- The drums must be marked "HAZARDOUS WASTE SATELLITE ACCUMULATION" or with other words that indicate its contents.

- Only one drum per waste stream at each hazardous waste satellite accumulation are to be used. Separate drums at each location will be used to collect spent solvents or paint and related wastes, as appropriate.

- Drums must be Department of Transportation 1A1 or 1A2 type drums with a bung hole opening for liquid wastes. A cover for the bung hole must be utilized to close the drum at all times that waste is not being added or removed.

- Additional SAAs or drums at existing areas may be instituted only with approval from Environmental Department personnel. In this event, the area supervisor and Environmental Department must assure that proper documentation kept and an inspection work order initiated.

Before the total quantity of hazardous waste accumulated in any one SAA reaches 55 gallons, the drum(s) must be moved to the storage area. Henderson maintenance personnel must notify the Environmental Engineer immediately if the total amount of hazardous waste in the accumulation drums at any one location reaches 55 gallons. If the total reaches 55 gallons, the waste container must be labeled as Hazardous Waste and dated as being generated at that time, regardless of whether the waste has been transferred to the storage area or not.

When waste from a SAA is moved to the hazardous waste storage area building:

- Environmental Department personnel will document in the waste accumulation inspection records the placement of the waste in the storage area; and

- The satellite drums when full will be transferred to the 180/270 day storage area .

If possible, the Environmental Engineer (or their designee) will arrange for the contents of the drums to be consolidated and taken to the hazardous waste storage area on a schedule such that the total generation of hazardous waste (i.e., the amount logged into the storage area) will remain under 1,000 kilograms in any given month.

7.4.2 Management of Non-Routinely Generated Hazardous Waste

The Environmental Engineer should be immediately contacted if hazardous wastes are generated from non-routine sources (e.g., rupture of a mercury electrical switch or spilling of hazardous waste during transport to the storage area).

Any hazardous waste generated in an area without a satellite accumulation station will be immediately taken to the hazardous waste storage area. Environmental Department personnel will determine the weight of such waste, place it in the appropriate storage drum and enter it into the log book as part of the monthly generation.

7.4.3 Labeling (40 CFR 262.34(a))

Environmental Department personnel (or designee) will ensure that all hazardous waste satellite accumulation and storage containers are properly labeled.

Satellite accumulation containers will be labeled "Hazardous Waste Satellite Accumulation" or a similar descriptive name.

Hazardous waste containers in the storage area will be labeled as "Hazardous Waste" along with the accumulation date. If possible they will be marked with the contents of the container and its EPA hazardous waste number.

7.4.4 Tracking Generation Rates

Environmental Department personnel will track the amount, accumulation date and nature of all hazardous waste placed in the storage area, including any used Stoddard solvent or antifreeze waste generated at Henderson which is determined to be hazardous. Note that antifreeze is normally recycled.

If an estimate of the total monthly generation of hazardous waste in the satellite accumulation and storage drums indicates that Henderson may have generated over the 1,000 kilogram threshold for a Large Quantity Hazardous Waste Generator, the actual amounts of waste may be weighed to ensure that the estimate represents the proper waste generator status.

If more than 1,000 kilograms of hazardous waste will be generated in a single month, Environmental Department personnel must ensure that all management procedures comply with the requirements of 40 CFR 262.34 for Large Quantity Generators.

Environmental Department personnel will schedule periodic shipments of hazardous waste for disposal so that no waste remains on site for more than the following:

- 90 days from the start of accumulation for wastes generated in a month when 1,000 kilograms or more of hazardous waste are generated;
- 180 days (270 days if shipped more than 200 miles for disposal) from the start of accumulation for wastes generated in a month when between 100 or 1,000 kilograms of hazardous waste are generated, as long as the total amount in storage is less than 6,000 kilograms;
- Indefinitely as long as less than 100 kilograms per month of hazardous waste is generated each month, but within 180 days (270 days if shipped more than 200 miles for disposal) from the time that 1,000 kilograms are accumulated.

7.4.5 Preparedness and Prevention (6 CCR 1007-3, Section 262.34(d) and 6 CCR 1007-3, Sections 265.31 and 265.37)

The Hoistman/Mill Control and Environmental Department personnel are designated as Emergency Coordinators with responsibility for coordinating emergency response measures in accordance with applicable site emergency plans and procedures.

The following information must be posted next to the hoistman's/mill control's telephone and central accumulation area:

- The Emergency Coordinators' names and telephone numbers.
- The location of fire extinguishers, spill control equipment and fire alarms.
- The name and telephone number of the fire department.

Henderson will attempt to make arrangements with local police, fire, hospitals, emergency response teams, emergency response contractors, and with the local county health department, which are appropriate for the types of hazardous wastes handled at Henderson and the potential need for the services of these agencies.

7.4.6 Inspections (40 CFR 265.174, 6 CCR 1007-3, Section 262.34(d) and 6 CCR 1007-3, Section 265.32-36)

The hazardous waste storage area must be inspected on a weekly basis to confirm the following:

- No hazardous waste/materials have been released from any storage containers;
- All storage containers are in good condition, without leaks, and are compatible with their contents;
- All storage containers are closed (unless waste is being added);
- All storage containers are labeled as hazardous waste, and the contents and date of the start of waste accumulation are noted on each container;
- The emergency alarm and/or communication systems are in good working order;
- Fire protection equipment is on hand and has been tested during the preceding month;
- Spill control and decontamination kits are fully stocked with respirators, gloves, coveralls, shovel, dust pan, absorbent, plastic trash bags, duct tape and barricade tape; and
- Aisle space between containers is adequate to allow unobstructed movement of personnel, fire protection equipment and spill control and decontamination equipment.

The hazardous waste satellite accumulation stations must be inspected on a weekly basis to confirm the following:

- No hazardous waste/materials have been released from any storage containers;

- All storage containers are in good condition; without leaks, and are compatible with their contents;
- All storage containers are closed (unless waste is being added); and
- All storage containers are labeled as required, and the date of the start of waste accumulation is noted on each container.

A record of the of the storage and satellite accumulation area inspections must be retained for at least three years.

7.5 Packaging of Hazardous Waste for Off-Site Shipment (40 CFR 262.40-40, CFR 262.33)

On a frequency determined by Environmental Department personnel, hazardous waste of the same types (e.g., mercury vapor and fluorescent lamps and liquid ignitable wastes may be consolidated from the various satellite accumulation stations and placed in the hazardous waste storage area.

Liquid hazardous waste must be shipped for recycling in compliance with DOT regulations.

Solid or sludge hazardous waste (i.e., solvent contaminated rags or debris) must be shipped for recycling or disposal in compliance with DOT regulations.

The Environmental Engineer (or his designee) will be contacted to determine required packaging requirements for hazardous wastes other than those above.

Prior to shipment, drums of hazardous waste must be labeled and marked in accordance with Department of Transportation requirements found at 49 CFR 172, Subparts D and E. Appropriate placards, as required under 49 CFR 172, Subpart F for transport of hazardous materials must be offered to the transporter and must be properly affixed to the transporting vehicle before departing Henderson property.

8.0 CONTAMINATED SOIL/DEBRIS

Petroleum contaminated soil/debris (PCS) is defined broadly by Henderson to include any type of solid material that becomes contaminated with petroleum or other industrial chemicals. The procedures and considerations specified above in these Procedures apply to Henderson's management of PCS. The general approach is to characterize the PCS, make a waste determination and manage the waste in accordance with applicable regulatory requirements and related risk management procedures.

8.1 Potential Sources of PCS

PCS can potentially be generated from numerous sources at Henderson. Spills and releases of materials used on site and debris generated from their cleanup are common potential sources of PCS.

Releases from Storage Tanks and Other Bulk Storage

Numerous petroleum and other chemical products are stored in bulk quantities at Henderson. The types, quantities and locations of these materials are identified in the Henderson Mine and Mill respective Spill Prevention Control and Countermeasures/Materials Containment Plans (SPCC/MCP). Additionally, various waste materials are accumulated at Henderson that could contribute to the generation of PCS. These waste accumulation areas and descriptions of the specific materials are identified in Table 1 - Henderson Mine Waste Accumulation Areas of Section 5.0 of this EMS Manual.

Failures of Industrial Operations and Equipment

In addition to stored materials, significant quantities of materials are contained in various pieces of equipment within Henderson operating processes. Examples of these materials include water treatment operations, process pipelines and the mill circuit. Failures of his equipment are another potential source of PCS.

Mobile Equipment Parking and Services Areas

Mobile equipment used at Henderson contains various types and quantities of petroleum and other chemicals. Examples of effected mobile equipment includes underground man-trips, loaders, drilling machines, roof bolters, loaders, pickup trucks, road graders, water trucks, as well and contract tanker trucks and cargo carriers. Releases from mobile equipment can potentially occur from a number of sources including leaking equipment, blown hoses and vehicle maintenance.

Historic Contamination Areas

Another source of PCS is areas of past spills and releases. Henderson personnel routinely inspect industrial areas to ensure that proper housekeeping is maintained and to identify potential environmental-related issues such as the presence of historic spills. Areas that show evidence of the presence of past spills are promptly addressed. Debris generated from such cleanup is managed as PCS.

8.2 Characterization of PCS

As with any waste, the initial step in properly managing PCS is to make a waste determination. Based on this characterization, the PCS is managed in accordance with applicable regulatory requirements and related risk management procedures at Henderson.

Generator Knowledge

As discussed above in these Procedures, if the source of the PCS is known, typically generator knowledge can be applied to determine how the waste must be managed and available disposal options. Use of generator knowledge requires sufficient documentation of the basis for the waste characterization. Adherence to Henderson's New Product Approval Procedure, which is described in section 2.0, is an important element in the effective use of generator knowledge to characterize PCS. Another important tool for the use of generator knowledge, which is described in sections 2.0 and 6.0, is the Henderson Waste Determination Database.

Sampling

In some situations, such as with historic spills or wastes generated from unknown chemicals, generator knowledge may not be sufficient to make a waste determination. In such cases, sampling and an analytical determination will likely be required to characterize the waste. If sampling is required, the contract laboratory and/or contract sampler should be consulted to ensure that proper sampling techniques are used and that analysis for appropriate parameters is completed.

8.3 Reporting requirements

Spills or releases of certain types and quantities of materials potentially trigger reporting requirements. There are two basic types of reports related to spills and releases.

8.3.1 Internal Reports

Internal reports include those made to Freeport-McMoRan (FMI) employees or contract legal counsel. The initial point of contact is with the Henderson Environmental Department. If appropriate, additional site or FMI contacts may be notified. The Henderson Mine and Mill respective Incident Response Manuals (IRM) contain reporting diagrams with the appropriate contacts and their phone/pager numbers.

8.3.2 External Reports

Certain spills or releases trigger regulatory-based requirements to notify government agency contacts. External reporting will be managed by the Henderson Environmental Department in consultation with the corporate Environmental Land and Water Department (ELWD) and/or legal counsel. The Environmental Department will work with and keep Henderson management apprised of any incident that might trigger an external report.

8.4 Initial Response to Releases of Industrial Materials

With any response, the most important requirement is to protect the safety of site personnel. Henderson has sufficient resources and systems in place to safely and effectively respond to releases that may occur at the site. In certain situations, contracted external resources will be utilized. If personnel are unsure whether they can safely respond to a spill, or are not sure how to respond, their response must be limited to notifying their supervisor or the Environmental Department of the incident. The Mine and Mill IRMs describe the appropriate response procedures and include a checklist containing information that should be obtained and reported for the spill. The appropriate initial response to a release of industrial materials depends on different factors.

Type and Quantity of Material

Spills of relatively small quantities of nonhazardous materials may be responded to by site personnel as routine housekeeping matters. Spills of materials displaying hazardous characteristics need to involve the Environmental Department. Large spills that exceed quantities that can be cleaned up with normal spill kits also trigger the need for involvement from the Environmental Department.

Location of Release

Spills that are limited to shop areas or the underground are within Henderson's process area and are not considered releases to the environment. Spills that have the potential to reach surface water or other areas of the environment are to be reported to the Environmental Department to ensure that a proper response is made; this would include spills underground at the Mine that reach process water and pose the risk of being pumped to the surface.

Available Response Resources

Any spills that cannot be safely responded to with available spill kits are to be reported to the Environmental Department. Such spills may warrant the use of external emergency response resources. Additionally, personnel who lack appropriate training, or are otherwise unsure whether they can effectively and safely respond to an incident are to report the spill to the Environmental Department for response follow up.

8.5 PCS Clean Up

The cleanup of PCS is a different process than the initial response. The initial response step is limited to controlling and containing the released material. As with the initial response procedures, clean up procedures for spills of industrial materials depends on the nature of the spill.

8.5.1 Type and Quantity of Material

As a part of Henderson's commitment to pollution prevention and waste minimization, Henderson utilizes the least hazardous materials practicable in its operations and supporting activities. As such, many of the materials that may generate PCS are considered nonhazardous and can be disposed of in the landfill. The landfill must have an approved PCS plan and that they will likely require additional testing (BTEX, TPH, etc.). As further described below, some PCS generated by Henderson triggers specific waste regulation that are not allowed to be disposed of in the landfill. Other PCS, although not subject to specific waste disposal restrictions, is not disposed of in the landfill, due to risk management considerations.

Non-Hazardous Chemicals

PCS generated from the cleanup of non-hazardous lubricants and other non-hazardous chemicals can typically be disposed of in an approved landfill, so long as the waste contains no free liquids. Floor dry or other absorbent materials are used to eliminate free liquids. In most cases generator knowledge can be used to determine whether or not these wastes are nonhazardous. In other situations laboratory analysis is necessary to make this determination.

In situations where it is not readily apparent what debris is contaminated with, laboratory analysis is necessary. Such an example includes floor dry cleanup from shop floors. Potential contaminants of the floor dry extend beyond chemicals stored in the area, and include such wastes as metal shavings and other materials

from surrounding equipment. To ensure that an accurate waste determination/characterization is made, Henderson samples and analyzes floor dry PCS annually.

Hazardous Chemicals

PCS that is contaminated with hazardous chemicals must be evaluated by the Environmental Department to determine whether the waste is subject to hazardous or other waste regulation. PCS that triggers such regulation must be managed in accordance with the applicable regulatory program(s). PCS that is not subject to hazardous waste or other regulation still may display hazardous characteristics that pose potential environmental concern, and must be managed accordingly to manage these risks.

Quantity of PCS

In addition to hazardous characteristics displayed by PCS, the quantity of PCS to be disposed of is another important consideration in determining how best to dispose of the waste. Typically, PCS is managed as a special waste and is sent offsite for disposal as an industrial waste. Personnel who generate large quantities of PCS are required to notify the Environmental Department to arrange for their off-site disposal.

8.5.2 Location of PCS

The physical location of the PCS is another important consideration in cleaning up and disposing of the PCS. PCS generated in contained industrial areas such as maintenance shops is typically comprised of relatively small quantities and confined to impervious surfaces. These sources of PCS can usually be cleaned up and disposed of in the trash following ordinary housekeeping procedures.

The proper disposal of PCS from historic releases and other incidents that contaminate environmental media can be more complicated for various reasons including:

- Accurately delineating the extent of the contamination (Both aerial and depth)
- Issues surrounding the cleanup processes, such as soil excavation and staging the PCS during cleanup prior to disposal
- Identifying and complying with applicable clean-up standards, which are sometimes on a site-specific basis
- Determining disposal requirements and applicable exclusions for PCS

Given the technical nature of these issues, Henderson typically works with contracted emergency response resources to ensure the proper disposal of PCS in these situations. The Environmental Department will coordinate these efforts.

9.0 MANIFESTS (40 CFR 262.20-40, CFR 262.23)

9.1 Manifests

The Environmental Engineer or off-site waste disposal facility will fill out all required information on a hazardous manifest for off-site shipment of waste.

The manifest form must be signed by one of the following RCRA and DOT trained individuals:

- Environmental Department personnel
- Warehouse or Maintenance Supervisor

For wastes subject to land disposal restrictions, a land disposal notification must accompany the waste shipment to the treatment and disposal facility (40 CFR 268.7(a)(1))

The transporter must sign and date the manifest upon accepting the waste for shipment.

A copy of the signed manifest will be retained for at least three years.

The returned copy of the manifest with the handwritten signature of the owner or operator of the recycling or disposal facility must be received within 60 days of shipment (SQG), and retained in the Environmental files for at least three years.

Please refer to the Manifest and LDR Requirements Procedure for detailed information on manifest and LDR requirements.

9.2 Exception Reports (40 CFR 262.42)

No exception reporting is required for shipments containing hazardous waste generated in quantities of 100 kilograms per month or less.

For shipments of wastes generated in months when Henderson has generated more than 100 but less than 1,000 kilograms per month of hazardous waste, the Environmental Engineer will notify the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division, of an exception and file a legible copy of the manifest with the Region if the signed returned copy of the manifest from the recycling or disposal facility is not received within 60 days of the shipment.

For shipments of wastes generated in months when Henderson has generated 1,000 kilograms or more per month of hazardous waste, Environmental Department personnel will:

- Contact the transporter and the facility to determine the status of the shipment. If the signed return copy of the manifest from the recycling or disposal facility is not received within 35 days of the shipment.

- File an Exception Report with the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division, if it does not receive the signed return copy within 45 days of the shipment. The Exception Report must include a copy of the original manifest

and a cover letter signed by the Environmental Engineer describing the efforts taken to locate the shipment and the results of those efforts.

10.0 RECORD KEEPING AND REPORTING (40 CFR 262.40, CFR 262.44)

Copies of each manifest form, Exception Report, and Biennial Report (for years in which 1,000 kilograms or more of hazardous waste was generated in any single month) will be retained in the Environmental files for at least three years.

Records of any test results, waste analysis or other determinations made in evaluating whether wastes generated at Henderson are hazardous wastes must be retained for at least three years after the waste(s) were last sent off-site for treatment or disposal.

Records containing data used to determine treatment requirements for land disposal will be retained for at least five years after the waste(s) were last sent off-site for treatment or disposal.

The three year and five year periods for records retention are extended during any state or federal enforcement action regarding hazardous waste requirements.

The Environmental Engineer will place a one-time notice in the files for all materials that are excluded from the definitions of solid or hazardous waste pursuant to 40 CFR 261.2 - 261.6, but would otherwise be subject to land disposal restrictions (e.g., used batteries). The notice must state the material, the basis for the exclusion from the regulations, and the disposition of the material. (40 CFR 268.7(a)(6))

By March 1 of each even-numbered year during which Henderson has generated 1,000 kilograms or more of hazardous waste in any single calendar month, Environmental Department personnel must prepare and submit to the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division, a Biennial Report, on EPA Form 8700-13A, containing the following information for the previous year:

- Henderson's name, address and EPA identification number;
- The year covered by the report;
- The name, address and EPA identification number of each off-site facility to which Henderson sent hazardous waste for treatment, storage or disposal;
- The name, address and EPA identification number of each transporter used during the year for transport of hazardous waste to a treatment, storage or disposal facility;
- A description of all hazardous waste shipped off-site for treatment, storage or disposal during the previous year, including quantities of each waste type separated by EPA waste number and Department of Transportation hazard class;
- A narrative description of the efforts undertaken to reduce the volume and toxicity of hazardous wastes generated by Henderson;
- A description of the actual reduction achieved in the volume and toxicity of wastes generated by Henderson as compared to previous years for which data are available; and
- A signed certification.

Henderson must retain records of any arrangements made with local police, fire, hospitals or emergency response teams, emergency response contractors, and with the local county health department, which are appropriate for the types of hazardous wastes handled at Henderson and the potential need for the services of these agencies. (6 CCR 1007-3, Section 262.34(d) and 6 CCR 1007-3, Section 265.37)

11.0 HENDERSON MILL LANDFILL

Henderson maintains and operates a non-hazardous waste landfill at the Henderson Mill tailings impoundment. Until recently, all non-hazardous waste generated at the Mill was disposed of in this landfill. With the implementation of the Henderson Waste Recycling Program, Henderson was able to contract a transport company to haul both recyclable material and municipal waste from the Mill for disposal and recycling. Therefore, **only mill spill (ore overflow from milling process) and approved construction/demolition debris is currently disposed of in the Mill landfill at this time**.

Under the Colorado Division of Reclamation, Mining and Safety (DRMS), Henderson is excluded from the Colorado Department of Public Health and Environment's (CDPHE) landfill requirements. However, under a related memorandum of understanding (MOU) between DRMS and CDPHE, Henderson is obligated to comply with the substantive requirements of these rules. As such, the Mill operates its landfill in accordance with the following provisions.

11.1 General Requirements

The following general requirements apply to the operation of the Mill landfill.

- **Prevention of PCB and Hazardous Waste Disposal:** Henderson has implemented a program at the facility for the detection and prevention of the disposal of polychlorinated biphenyl (PCB) and hazardous wastes. This program includes:
  - Prohibition of acceptance of waste generated offsite
  - Adherence to waste procedures specified in the Henderson Environmental Management Plan and Procedures Manual (EMPM)
  - Posting of signage in appropriate locations, including the landfill and dumpsters that identifies prohibited wastes
  - Inspections of dumpsters and the landfill to ensure that prohibited wastes are not disposed of at the site
  - Training of facility personnel to recognize prohibited wastes and prevent their disposal in the landfill
  - Notification of the Henderson Environmental Department if prohibited wastes are discovered in the landfill
  - Notification of the Colorado Department of Public Health and Environment (CDPHE) in appropriate situations

- **Nuisance Conditions:** Henderson ensures that nuisance conditions do not exist at or beyond the site boundary. All reasonable measures are employed to collect, properly contain, and dispose of scattered litter including frequent policing of the area. The facility is managed in such a manner to ensure that the following do not constitute a health hazard:
  - Noise, dust and odors
  - Attraction, breeding and emergence of birds, insects, rodents and other vectors

- **Water Pollution Prevention:** Henderson Mill operates under the following permits and controls to prevent pollution of water at the site:
  - Colorado Pollutant Discharge Elimination System (CPDES) permit

- Stormwater permit and associated stormwater management plan (SWMP)

- **Aquifer Recharge Protection:** No significant aquifer recharge areas, as may be designated by the Colorado State Engineer's office or the Department's Water Quality Control Commission, are adversely impacted by solid waste disposal.

- **Storm Events:** The site utilizes: (a) A run-on control system to prevent flow onto the active facility during the peak discharge from a 25-year, 24-hour storm, and (b) A run-off control system to: (1) collect the water volume resulting from a 25-year, 24-hour storm event and (2) control the water volume resulting from a 100-year, 24-hour storm event.

- **Prevention of Waste from Leaving the Site:** The site is adequately secured to prevent waste material and debris from leaving the site. Waste material and debris is collected regularly and placed into the fill.

- **Control of Public Access:** The site controls public access, prevents unauthorized vehicular traffic, provides for site security both during and after hours, and prevents illegal dumping of wastes.

- **Burn Restrictions:** Solid wastes deposited at the site are not burned, except as allowed under required open-burn permits administered by the applicable authority.

- **Landfill Cover:** Henderson Mill provides adequate cover for waste deposited in the landfill to prevent ponding of water, wind erosion and water pollution.

- **Distribution of Waste on Landfill:** Wastes are distributed in the smallest area consistent with handling traffic to be unloaded.

- **Waste Compaction:** Wastes are placed in the most dense volume practicable using compaction or other approved methods

- **Minimizing Wind-Blown Debris:** To avoid wind-blown debris, Henderson Mill does not deposit waste in the landfill during periods of high wind velocities.

- **Prohibition on Sewage Disposal:** Henderson Mill does not dispose of raw sludges from wastewater treatment plants, septic tank pumping, or chemical toilet wastes in the landfill.

- **Prohibition on Disposal of Free Liquids:** Henderson Mill does not allow the disposal of liquid wastes or wastes containing free liquids in its landfill.

- **Site Restoration:** Henderson Mill is subject to reclamation requirements governed by the Colorado Division of Reclamation, Mining and Safety (DRMS) which ensures that, upon being filled, the landfill will be left in a condition of orderliness and good aesthetic appearance that blends in with the surrounding area.

- **Protection of Surface and Ground Water:** Henderson Mill operates its landfill consistent with these procedures to prevent the contamination of surface and groundwater from wastes disposed of in the landfill.

11.2 Water Monitoring

The Mill landfill is located within the Henderson 1-Dam tailing containment system, which is designed to capture and recycle seepage from the tailing impoundment. Various monitoring wells have been constructed and are used to monitor the effectiveness of this tailing seep collection system, and ultimate protection of surrounding groundwater. This monitoring system will be used to verify that the landfill is not adversely impacting water managed within the containment system. Based on hydrology analyses completed at the site, any contamination of subsurface water caused by the landfill would be expected to be detected in these wells. Refer to Henderson Mill Tailings Pond Hydrology Report (February 2004) and Henderson Mill Water Barge Project Hydrology Report (February 2005). The landfill groundwater monitoring program consists of three phases:

- Detection Monitoring
- Assessment Monitoring
- Corrective Action

Monitoring for potential impacts from the landfill is conducted according to the Water Monitoring Plan.

12.0 CONTRACTORS & OFF SITE FACILITIES

Prior to the use of any outside services for the transportation, disposal or recycling of hazardous waste, used oil, or other materials that may otherwise be regulated as hazardous waste, Environmental Department personnel shall evaluate the provider of that service for potential environmental liabilities.

The evaluation may include consultation with state or federal environmental regulatory agencies, other Freeport-McMoRan companies with knowledge of the facility, or may require a site visit or audit by Henderson personnel or third-party consultants.

Prior to contracting with any facility for such services, Henderson shall obtain copies of required permits and authorizations necessary for the operation of the off-site facility, or otherwise ensure that the facility has such documentation.