

Black Mountain Mining

BMM-HSE-ENV-SOP-0040 Handling, Storage and Disposal of Waste

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❖ **Change History**

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❖ Definitions and Abbreviations

Word / Phrase / Abbreviation	Definition
PEME	PEME is an acronym used in Black Mountain Mining and has the following meaning: - People, - Equipment, - Materials, - Environment, The use of this in written documentation helps to comply with Resources Clause 7 – ISO 9001, ISO 14001 and ISO 45001. It is advisable to include in all written documentation.
Asbestos waste:	Means an undesirable or superfluous asbestos- containing by-product, emission or residue of any process or activity that has been discarded.
Black Mountain Property	Mine comprises of Deeps, Plant and Swartberg operation which mines Copper, Lead and Zinc
Chemical waste:	This is a special class of waste and comprises of waste of a chemical nature. The waste may be solid or liquid, soluble or insoluble, flammable or inflammable. Examples of chemical waste includes slake lime, elemental sulphur, zinc sulphate and copper sulphate.
DWS:	Department Water and Sanitation
e-waste:	This is a special class of waste defined as secondary computers, entertainment device electronics, electronic control boards, mobile phones which is discarded, reused, or recycled. It is defined as a hazardous waste as it could contain the following chemicals: mercury, sulphur, PCBs, PBBs, Cadmium, lead and/or beryllium oxide.
Garden Waste:	Waste that does not pose an immediate threat to human beings or the environment. It includes any form of vegetation that has been removed from gardens or areas on the black mountain property. It also includes used wood products such as palettes.

Word / Phrase / Abbreviation	Definition
General waste:	Waste that does not pose an immediate threat to human beings or to the environment. It may, however, with decomposition produce leachate with an unacceptable pollution potential. This waste may be disposed of at the Domestic Waste Refuse site only. Examples include household wastes and unrecyclable materials.
Hazardous waste:	Waste that may, by circumstance of use, quantity, concentration or inherent physical, chemical, or infectious characteristics, cause ill-health or increase mortality in humans, fauna, and flora, or adversely affect the environment when improperly treated, stored, transported, or disposed of. Examples include any petrochemical contaminated substance, fluorescent tubes, printer cartridges, any substance contaminated by chemicals including reagents and acids.
HOD:	Head of Department
Oilkol:	Oil collection company that transports Oil to Exol Refinery
PBB:	Polybrominated biphenyl, is a chemical used to make plastic materials more difficult to burn. These chemical poses health risks and could possibly be carcinogenic.
PCB:	Polychlorinated biphenyl, a carcinogenic persistent organic pollutant used as a dielectric fluid.
PPE:	Personal Protection Equipment
Reclite:	Organisation that recover and recycle all lighting lamps such as fluorescent lamps and other associated lamp products.
Salvage Scrap:	Material that can no longer be repaired or re-used by another activity on the mine or business within the industrial area. It includes steel, machinery, HDPE pipes, scrap metal, copper cables, cable, reels (sorted into a separate telecon to other salvage materials), conveyor belts, V-belts, tyres, redundant steel wire ropes from winches and winders, and redundant equipment or machinery.
S.E.X.:	Sodium Ethyl Xanthene
SOP:	Safe Operating procedure
Waste:	An undesirable or superfluous by-product, emission, or residue of any process or activity which has been discarded, accumulated, or stored for the purpose of discarding or processing. It may be gaseous, liquid, or solid or any combination thereof and may originate from any activity undertaken on the mine premises. This definition excludes sewage, mining, and metallurgical wastes.

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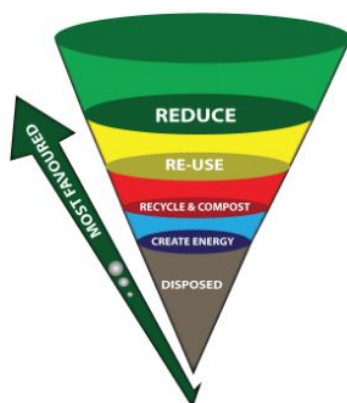
Word / Phrase / Abbreviation	Definition
Vissershok:	Vissershok landfill is located close to Table View and exists for the disposal of general and low to medium hazardous waste which cannot be reused or recycled.

1. POLICY STATEMENT

Black Mountain and Gamsberg Standard Operating Procedures (SOP's) shall be written in a clear concise manner, communicated to all employees and applied accordingly.

2. OBJECTIVES

The objective of Procedure SSD-EN SOP-040: Handling, Storage & Disposal of Waste is to ensure that all waste generated on Black Mountain and Gamsberg is handled in an environmentally safe and responsible manner. It further ensures that all wastes are separated into their respective classes to facilitate possible recycling and proper disposal and to allow BMM and Gamsberg to comply with the requirements of the waste hierarchy.



3. SCOPE

The BMM-HSE-ENV-SOP-040 Handling, Storage & Disposal of Waste procedure applies to all wastes generated from the various activities occurring on Black Mountain property, which includes the Gamsberg.

4. PROCEDURE CONTENT

4.1 Temporary Waste Storage Areas

- Each section / Business Partner is responsible for ensuring that a temporary central waste storage area is constructed / designated.
- Each section / Business Partner is responsible for the issuing or purchasing of waste receptacles and other management tools.
- Waste Management Business Partner shall collect waste contained in waste telecons to the relevant final disposal site, waste stored in 210 drums is transported by the sections.
- Waste should be stored in such a manner to eliminate wind-blown waste.
- Larger volumes of waste should be placed in a telecon/skip to ease removal. If the volume is too large for a telecon, the item should be moved directly to the Salvage Yard.
- All hazardous waste receptacles are to be placed on cemented, impervious floor and bounded by a retaining bund wall with the capacity of storing 110% of the volume of waste to be stored within the bunded area.
- Storage of hazardous waste drums on top of pallets prevents damage and spillage when handled or transported by means of forklift.
- Waste generated in sections / Business Partner's site are to be sorted at source and transported to the Salvage Yard or landfill site.
- Sign depicting which waste type is stored in each telecon are to be clearly displayed behind or on the container. Unless communicated with the Environmental team.
- Where hazardous waste is stored in a 210 litre drums, the drum should be labelled before use and closed with a lid should be closed before transport.
- Should waste be transported on the national roads the transporter must have a SAWIC waste transporter registration.
- Temporary Waste Storage Facility inspections must be done Monthly for every storage site

4.2 Waste streams

Waste is sorted according to receptacle colours:

Diagram 1: Waste sorting at Salvage Yard, Domestic and Garden landfill sites

Waste type	Storage, Transportation and Disposal	Example
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Domestic / General Waste	Transport - waste must be covered when transported to the landfill to avoid windblown waste Stored in a yellow telecon /Black bag Disposed at the onsite Domestic Landfill site	Broken window glasses, food waste
Garden Waste	Stored in a green bag / White Telecon Disposed at the Garden Waste Site	Wood, leaves, grass-cuttings,
Building rubble	Residue from building sites must be used in foundations of new building sites. If the above is not possible, the building rubble must be removed to the Broken Hill Waste Rock Dump and disposed of at a designated area. No wood/ steel/ plastics or paper may be discarded with the building rubble. Empty paint containers will be disposed as hazardous waste.	Empty cement bags, bricks
Medical Waste	Stored at the Occupational Clinic Waybills/Waste Manifests are managed by the Occupational health clinic.	Needles, swabs, dressings, syringes
	Household Medical Waste Expired / unused Medical products must be returned to the state clinic, the pharmacy or the doctor's office	Expired medication syrup, tablets, ointments
Recyclables	Glass: Stored in Feedlog/Voersak/Ngxowa bags and/or white wheelie-bin If it is a chemical glass bottle should be treated as hazardous waste (see <i>Hazardous waste below</i>) No glass should not be broken Sold to recycling company Bulk is stored at the Salvage Yard Note: Broken glass windows/bottles are to be disposed by the recipient in the yellow telecons at the Temporary Waste Telecon Bays	Soft drinks glass, Chemical glass, glass condiment bottle <i>Does not include window glass or light bulbs</i>
	Paper: Stored in Yellow bag and/or wheelie-bin Bulk is stored at the Salvage Yard	Un glossy paper, posters, boxes, newspaper
	Cans: Stored in Blue bags and/or wheelie bin Bulk is stored at the Salvage Yard	Food tins, soft drink cans

Salvageable	Salvageable steel can be stored in a Blue telecon Stored at the Salvage Yard Unused Oil and Grease drums are compressed, stored and sold as scrap Copper cables should be locked away to prevent theft Conveyor belts contaminated with lead can only be sold to a recycler if a safe disposal certificate can be produced	Metal conveyor, Scrap steel, Copper cables
Electronic Waste	Stored at the Salvage Yard and Township Yard Computers and parts need to be scraped with finance before disposal Can be sent to Salvage Yard site or sold for recycling	Old computer parts, sensors and electronic boards
Petrochemical and Household Oil	Used petrochemical Oil Stored in 210L drum (clearly marked with contents and Origen) or oil designed tanks Lubrication oil collected by Oilkol is sent for recycling at Exol Oil Refinery	Hydraulic oils Transmission Rock drill oils Grease
	Used plant or animal-based oil and fat Used oil from households is to be disposed at the waste oil tanks placed at the waste transfer points in South Village and Township Engineering Can affect the sewerage ponds operation negatively Fat and grease traps should be installed at all large-scale kitchens (e.g. hostel kitchen) All fat / grease traps are to be cleaned out daily	Cooking oil, baking fat
Contaminated Soil	Oil contaminated soil and absorbent material is sent to the Bioremediation Site if bioremediation site is full it must be sent to the salvage yard for disposal as hazardous waste As grease is a silicon-based product it cannot be biodegraded it should not be added to the contaminated soil Contaminated soil TPH levels is tested once a month and assessed as clean or ongoing	Oily sand / contaminated soil, <i>Does not include grease</i>
Hazardous	Hazardous Waste Store large items in Green telecon or smaller items in 210L drum All hazardous waste must be separated at source and disposed into different 210L drums before taken to Salvage Yard. Drums must be tightly sealed to ensure no oil leaks from the drum. All hazardous waste drums must be labelled correctly according to the contents of the container. The hazardous waste sticker must cover any other label on the container to prevent confusion of content. Hazardous Waste Stickers for labelling can be ordered from the stores as a stock item. Any product / waste (general) that met/contact hazardous waste is deemed as hazardous waste Hazardous waste (Category A) as per National waste act (Act 59 of	Oily Rags, filters Absorbent materials used to clean up oil / chemical spills Spray cans Paint containers & tins

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	2008) may only be disposed of on a registered Class 1 site, such as Vissershoek Hazardous Waste Site No hazardous waste is to come into direct contact with any person or the environment Only a company that is licenced under the Road Traffic Act and the National Waste Act may, transport hazardous waste, on national roads. Hazardous Waste drums should be removed off with the rule of first in, first out rule. All hazardous waste leaving the mine premises should be accompanied by a waybill	
	Used PPE Used PPE is classified as hazardous waste unless it can be washed and decontaminated. Decontaminate PPE, includes Gumboots hardhats and overalls, can be recycled. Used PPE must not be disposed of in General waste bins/drums or telicons.	Contaminated used PPE
	Chemical drums and chemical bottles Stored in 210 L drum and mark as Cyanide contaminated material. The drum should be stored in the cyanide plant. Collected for disposal at the cyanide plant. Absorbent materials (e.g. tissue -, filter paper) used to clean up oil / chemical spills at the laboratory will be disposed into marked orange bags Orange bags are available as stock item at BMM Supply Chain. All chemical drums are to be cleaned, rinsed and sent to the Salvage Yard, as per procedure SSD-ENV-SOP-048 Operating and Managing the Salvage Yard. Plastic chemical bottles used by the Laboratory are to be rinsed as much as possible and placed in a hazardous waste bin/ orange bag. Senkol 700 drums (blue plastic) may NOT be sold, donate. These are to be transported to the Salvage Yard from where they will be disposed of as hazardous waste. S.E.X. chemical drums are to be rinsed and taken to the Salvage Yard from where they will be issued for the storage of hazardous waste	Chemical bottles, Sample bottles
	Used Batteries Old vehicle battery is replaced with a new one and the old sent to the Main Workshop Store Vehicle batteries stored upright, on cement or pallet and transported separately. Vehicle batteries should not be thrown into hazardous waste telecons Cap-lamp batteries must be returned to supplier or treated as hazardous waste (labelled correctly).	Old vehicle batteries, Cap-lamps

	Fluorescent tubes Must be handled by the electrical departments only Stored in appropriate storage Old tubes are taken directly to the disposal facility at Township Engineering, Shaft Engineering or the Concentrator Plant Engineering	Fluorescent tubes and Sodium Vapor and Mercury bulbs
	Old Tyres Old tyres that can be re-treaded are stored at Main workshop The responsible engineer will scrap tyres that can no longer be re-treaded. Old Scrap tyres are stored at the Salvage Yard	
	Printer cartridge Must not be disposed of with other office waste Used cartridges must be replaced in their original boxes, sealed and returned to supplier	
	Asbestos A professional asbestos removal company must be used to remove asbestos material Transportation must be clearly identified, classified and packed in accordance with SABS 0228 and SABS 0229. Any article or substance, which contains asbestos, must be clearly labelled in the form of Regulation 19(c) annexure /1 of the Asbestos Regulations 2002 All vehicles, re-usable containers or any article that has been in contact with asbestos waste must be cleaned and decontaminated after use in such a way as not to contaminate the inside or outside of the working place concerned Small volumes of asbestos should be double bagged (labelled as asbestos) and be disposed of as hazardous waste. If asbestos pipes fail, it must be replaced with non-hazardous material	
Production Waste	Ore spill Fresh - back into crusher circuit Contaminated - confirm with concentrator plant before return to crusher as it might influence the process	
	Concentrate Spills Fresh - recycled back to Plant Oxidised - transported to Tailings dam	
	Elemental sulphur spillage Stockpiled and transported to the Tailings Dam for disposal	
	Slake lime spillage	

	Stockpiled and transported to the Tailings Dam for deposition	
Sewerage	Sewerage Waste Stored at the sewage ponds (Plant and Township ponds) Portable Sewage Ponds Underground sewage is disposed at the Plant oxidation pond	

4.3 Safety Issues

- Waste, as per the above definition, has the potential to cause harm to people as well as the environment. For this reason, it is important that all persons dealing with waste should be aware of the implications of the material and should wear the appropriate personal protective equipment (PPE) and take the necessary precautionary measures. PPE that should be worn includes:
 - Gloves —that is impervious for the handling of any hazardous material
 - Overalls — acid resistant in the case of handling chemical wastes
 - Safety boots
 - Safety glasses
 - Ear plugs if working in a noisy area (cutting metal)
- Care should be taken when handling drums that have been cut open to re-use. These could have sharp edges that may cause injury.

4.4 Reporting and permit requirements

Monthly Waste (General and Garden) Volumes are reported on SAWIS the South African Waste Information System as managed by Department environmental affairs.

DWS have issued permits for both the landfill sites located on Black Mountain. These permits state that an annual report must be submitted to the Department as per BMM-HSE-ENV-SOP-043 *Management of Domestic & Garden Refuse Dump*.

4.5 Waste Management Plan

A Waste Management Plan has been compiled for Black Mountain mine. The plan contains information of current waste handling procedures as well as identifying areas where improvements to the system can be implemented.

5. RESPONSIBILITIES

- The Environmental Manager shall implement and maintain this document.
- Department Heads shall ensure that this SOP is applied with due diligence.
- Deviations from this SOP shall be communicated via approved "Deviations from Standard" documentation.
- Should additional precautions, due to special circumstances unique to that Department/Section, over-and-above the requirements of the Procedure be necessary, then the Department Head shall ensure that, in consultation with the relevant specialists, such requirements are specified in writing, conveyed over to the end users and recorded as such.

6. ASSOCIATED DOCUMENTS

BMM-HSE-ENV-SOP-035 Environmental Audits

BMM-HSE-ENV-SOP-036 Environmental Document Control & Record Keeping

BMM-HSE-ENV-SOP-048 Operating and Managing the Salvage Yard

BMM-HSE-ENV-SOP-043 Management of Domestic & Garden Refuse Dump.

7. Validity and Document Management

7.1 Document Validity

This SOP is effective from 2020/08/18 and was last reviewed on 14-02-2024. This SOP will be reviewed every 2 Years.

7.2 Document Management

- 7.2.1. This SOP replaces any other SOP issued earlier by BMM to the extent specifically covered here. This SOP should be followed in letter and spirit.
- 7.2.2. BMM is committed to continuously reviewing and updating policies and procedures, based on the Entity's risk assessment and shall incorporate for any regulatory requirement which is required to do so.
- 7.2.3. Any amendment to this SOP or issue of any guidance or circular etc. under this procedure must be approved in writing by the approving authority as listed in this document.
- 7.2.4. BMM reserves the right to withdraw, modify or revise the SOP as a whole / partial without providing any justification for the same. On revision, it should be duly communicated to the personnel involved.
- 7.2.5. If compliance with this SOP ever conflicts with the applicable law, regulation, directives issued by the statutory and or regulatory authority, then compliance must be ensured with the law.
- 7.2.6. In order to ensure compliance or to address any known conflicts with the law or to address any specific local requirements, BMM may adopt local sub-procedures which shall be by way of addendum to this SOP and which shall be approved by the approver of this SOP. Proposing of such addendum shall be the responsibility of the respective Entity's competent authority who is at an equivalent level with the SOP owner as set out in this document.

7.3 Violation of Sop

- 7.3.1. BMM follow a "Zero Tolerance Policy" with respect to non-compliance with this SOP and/or any other SOP / guidance issued by BMM and its constituent Entities.
- 7.3.2. Violation of this SOP is subject to appropriate disciplinary actions which may include but not limited to termination of employment. This determination will be based on the facts and circumstances of each situation. Any accused of

violation of this SOP will be given an opportunity to present their case prior to any determination of appropriate disciplinary actions. Violation of this SOP may also be subject to substantial civil damages, criminal fines and prison terms.

- 7.3.3. Each employee is responsible for ensuring that their conduct and the conduct of anyone reporting to them shall fully comply with this SOP. Compliances, both personal and by subordinates, will be a factor in periodic performance appraisals.

7.4 Disclaimer

- 7.4.1. This SOP issued by BMM is for internal compliance and does not create, nor shall it be construed to create, directly or implicitly, any rights, duties or obligations of BMM to any person, body or legal Entity.
- 7.4.2. This document and its contents are the copyright property of BMM. The release of this document to any third party outside BMM is strictly prohibited without prior consent.

8. Review and Approval

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This document was approved (in sequence) by the individuals above using electronic approval in our Document Control System.

Final approval status: **Approved**

Approvals were done electronically.

❖ **Annexures / Appendix**