forestry, fisheries
& the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

RISK MANAGEMENT PLAN IN TERMS OF REGULATION 10 OF THE WASTE EXCLUSION REGULATIONS

	(For official use only)
File Reference Number:	12/9/11
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Date Received:	

Risk Assessment for an application for exclusion of waste stream or portion of waste stream in terms of the National Environmental Management: Waste Act, 2008(Act No.59 of 2008), as amended.

Kindly note that:

1. This form is current as of 01 April 2021. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority.

2. The information must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.

3. Incomplete forms (including information as required in the application form may be returned to the applicant for revision and the inclusion of additional information.

4. Unless protected by law, all information filled in on this application will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this application on request, during any stage of the application process.

BACKGROUND INFORMATION	
APPLICANT	Sibanye-Stillwater Limited
CONTACT PERSON	Hennie Pretorius
NAME	Hennie Pretorius
ADDRESS	Portion 13 of the Farm Waterpan 292 IQ, Westonaria Gauteng
E-MAIL ADDRESS	Hennie.pretorius@sibanyestillwater.com
TELEPHONE	057 733 8674
CELL PHONE	083 994 9736

WASTE FACILITIY OR FACILITIES						
SOURCE (S) OF WASTE	Coal fired boilers used to generate steam for energy in the processing of Uranium. Coal ash is generated as a waste product from this process. The Uranium plant is currently under Care and Maintenance; therefore, the course boiler ash is longer being generated and considered legacy waste.					
WASTE TO BE BENEFICIATED	Course Boiler Ash					
GPS CO-ORDINATES AT CORNERS OF WASTE GENERATING FACILITY OR FACILITIES		LATITUDE			LONGITUDE	
	Southern Corner	26°21'34.2"S	South		27°42'50.35"E	East
	South-Western Corner	26°21'32.88"S	South		27°42'47.79"E	East
	Northern Corner	26°21'27.88"S	South		27°42'51.10"E	East
	North-Eastern Corner	26°21'29.16"S	South		27°42'53.45"E	East
BENEFICIAL USE/S	Brick Making/block Making					

WASTE GENERATING PROCESS		
MSDS ATTACHED IF HAZARDOUS	YES X	NO
WASTE GENERATING FACILITY	HAZARDOUS X	GENERAL

RISK MANAGEMENT PLAN

Activity	Risk Description	Action(s) to minimise/manage the risk	Responsibility (Who is responsible to carry out the action(s)
Coal ash generated from the combustion of bituminous coal comprises principally of aluminum oxide (Al2O3), calcium oxide (CaO) and silicon dioxide (SiO2). The fact that ash is classified as hazardous is as a result of these components and the impact these could have on the health of humans. Hazards include inhalation of the dust (causing lung irritation, damage or potentially cancer from silicates) or contact with eyes and skin (irritation). Ash, when exposed to natural elements, and when mono-stored, is unlikely to leach into the natural environment (distilled leach). Leaching will only occur in highly acidic environments, where the pH is below a pH of 5. In addition, the pH of ash is alkaline often reporting over a pH of 7.5.			
Loading of ash for transportation	Generation of dust and inhalation	• All site safety, health and environmental procedures and protocols to be in place and implemented when loading of ash. • Wetting of ash prior to or during the process of loading • Loading of ash to be prohibited during excessively windy, gusty days. • PPE to be used when loading and handling ash. This includes dust masks, goggles, overall and gloves. Training and awareness on the safe handling of ash to be provided to all employees.	Ash generator
Transportation of ash	Spillages, dust and inhalation, compliance of vehicles transporting loads and driver competency	• Wetting of ash is required regardless of if a tarpaulin will be used to cover the ash. • Vehicles should not be overfilled and if no tarpaulin is used the vehicle should be loaded under the maximum capacity. • If spillages occur along the route this must be cleaned up immediately and vehicles to be equipped to do so • Vehicles will be compliant with the relevant legislation, regulations and standards. • Transporters to have a hard copy of the Course Ash Safety Data Sheet (SDS) on hand. • Development and implementation of an emergency response plan.	Ash Transporter

		• PPE to be used when loading and handling ash. This includes dust masks, goggles, overall and gloves. • No passengers to be allowed in the Vehicle cargo during transportation. Training and awareness on the safe handling of ash to be provided to all employees.	
Off-loading of ash	Generation of dust and inhalation	▪ All site safety, health and environmental procedures and protocols to be in place and implemented when off-loading and handling ash. ▪ Wetting of ash is required during off-loading activities to prevent dust generation. ▪ Prohibition of off-loading when extreme wind conditions exist. ▪ PPE to be used when off-loading and handling ash. This includes dust masks, goggles, overall and gloves. ▪ Training and awareness on the safe handling of ash to be provided to all employees. ▪ Off-loading to take place in allocated area. ▪ Ash to be off-loaded on bunded hardstanding floor and stormwater should be managed by separation of clean and dirty water runoff. Signage to be in place indicating PPE required	Ash User Facility
Storage of Ash	Generation of dust, inhalation and potential contamination of water/soil	▪ All site safety, health and environmental procedures and protocols to be in place and implemented when managing and handling ash. ▪ Avoid deposition outside of areas which are intended for ash storage. ▪ Prevent dust generation through wetting of stockpiles. ▪ Ash to be stored on bunded hardstanding floor and stormwater should be managed by separation of clean and dirty water runoff. ▪ Dirty stormwater should be appropriately managed on site, collected and disposed of when necessary.	Ash User Facility

		▪ Clean up of spills outside of demarcated areas. Spilled ash should be contained, picked up and reused where possible in the process. Adequate PPE to be worn when addressing spills. ▪ Access to the site to be adequately controlled. ▪ Signage to be in place indicating storage area and PPE required	
Handling of ash and manufacturing	Generation of dust and potential contamination of water/soil	▪ All site safety, health and environmental procedures and protocols to be in place and implemented when managing and handling ash. ▪ Dust to be managed throughout the handling process and where required wetting to be undertaken. ▪ Ventilation must be adequate as is required by the SDS when handling ash. ▪ Mixing to be undertaken in allocated bunded area. ▪ PPE to be used when handling ash. This includes dust masks, goggles, overall and gloves. ▪ Signage to be in place indicating PPE required Training and awareness on the safe handling of ash to be provided to all employees	Ash User Facility
Disposal of ash waste not reused in process	Illegal / improper disposal of waste	▪ The National Environmental Management Waste Act and associated Waste Management and Classification Regulations and Norms and Standards, should be adhered to for the storage and disposal of waste. ▪ The Course Ash SDS can be used as a guidance for the management and disposal of waste.	Ash User Facility
Decommissioning, closure and rehabilitation requirements	Environmental Liability and contamination	▪ Implementation of legislation associated with liability, closure and rehabilitation of industrial sites. ▪ Removal if required of any unused ash, either for approved reuse by another party or for disposal to the correctly allocated waste disposal facility. ▪ Remediation and rehabilitation of areas where ash might have resulted in land contamination	Ash User Facility

I, Hennie Pretorius (the Applicant) hereby declare that I have read the completed Risk Management Plan form and hereby confirm that the information is, to the best of my knowledge, true and correct.

Furthermore, I declare that I am fully aware of my responsibilities in terms of the Waste Exclusion Regulations, and that failure to comply with these Regulations may constitute an offence in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008).

Signature of the applicant[1]/ Signature on behalf of the applicant:

Hennie Pretorius
Name of Applicant:

Unit Manager Environment and Sustainable Development
Designation

19 April 2023
Date:

[1] If the applicant is a juristic person, a signature on behalf of the applicant is required as well as proof of such authority.

Course Ash Waste
Sibanye-Stillwater
SANS 10234 Safety Data Sheet

Section1: Waste & Generator Identification			
Waste Type	Course Ash	Synonym(s)	Boiler ash
Waste Generator	Sibanye-Stillwater Constantia Office Park Bridgeview House • Building 11 • Ground Floor Cnr 14th Avenue & Hendrik Potgieter Road Weltevreden Park • 1709	Tel: +27 (0) 11 278 9600	
		Emergency Contact Person	Group Environmental Specialist: Waste, Land and Heritage
		Emergency No.	+27 (0) 14 571 2311
Waste Origin	The ash material is produced as waste by the boilers at Sibanye-Stillwater located at their processing plants.		

Section 2: Hazards Identification		
Physical	Health	Environmental
-	Skin irritation - Category 3 Carcinogenicity – Category 1B Specific Target Organ Toxicity; repeat exposure – Category 1	-

GHS Hazard Symbol(s)

Signal Word	DANGER
Hazard Statement(s)	H316 Causes mild skin irritation
	H350 May cause cancer (Through inhalation)
	H372 Causes damage to organs (respiratory system) through prolonged or repeated exposure (inhalation)
Precautionary Statement(s)	P201: Obtain special instructions before handling
	P202: Do not handle until all safety precautions have been read and understood
	P260: Do not breathe dusts (if present)
	P264: Wash exposed body parts thoroughly after handling
	P270: Do not eat, drink or smoke when using this product
	P281: Use personal protective equipment as required
	P314 Get medical advice/attention if you feel unwell
	P308+P313: If exposed or concerned: Call a POISON CENTRE or doctor/physician
	P332+P313: If skin irritation occurs: Get medical advice/attention
	P405: Store in appropriate areas with access control
	P501: Dispose of contents/container in appropriate waste skips

Section 3: Composition / Information on Ingredients			
Common Chemical Name	Synonym(s)	CAS#	Concentration (%/weight)
Quartz	Silicon dioxide (crystalline)	14808-60-7	~1.41
Corundum	Aluminium Oxide Al_2O_3	1302-74-5	~3.1
Mullite	Aluminium silicate $Al_6Si_2O_{13}$	1302-93-8	~35.4

Course ash is a by-product of coal combustion and may contain inconstant trace amounts of various different elements depending on the natural source of the coal and batches. These may include arsenic, antimony, lead, nickel, manganese, chromium, boron, beryllium, selenium, cadmium, mercury, vanadium and other metals in trace (<0.1%) amounts.

Section 4: First Aid Measures	
General advice	If consulting a physician. Show this safety data sheet to the doctor in attendance.
Contact with Skin	Take off contaminated clothing and shoes immediately. Wash off with plenty of soap and water. Obtain medical advice.
Contact with Eyes	Check for and remove contact lenses. Hold eyelids open and rinse thoroughly with plenty of water for at least 15 minutes. Obtain medical advice.
Inhalation	If breathed in, move person to fresh air. If not breathing give artificial respiration. Keep the affected person warm and at rest. If irritation develops or persist, severe coughing and breathing difficulties occur, call for immediate medical assistance.
Ingestion	DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Obtain immediate medical advice / attention.
PPE for First Aid Responders	Wear protective clothing, gloves, eye protection and respiratory protection / dust mask.

Section 5: Fire-fighting Measures	
Extinguishing Media	Use extinguishing media appropriate to the surrounding fire.
Potential Products of Combustion	May emit hazardous fumes under fire conditions / thermal decomposition. Ash is however, not flammable.
Protective equipment / precautions for fire-fighters	Wear self-contained breathing apparatus for firefighting if necessary (large fires, poorly ventilated areas). Dust mask advisable in all circumstances.

Section 6: Accidental Release Measures		
Personal Precautions / PPE	Response and clean-up crews must be properly trained. Avoid contact with skin and eyes or breathing dust (~~if present~~). Use gloves, eye protection, protective clothing and appropriate breathing apparatus / dust mask.	
Environmental Precautions	Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material.	
Clean-up Method / Materials & Containment	SMALL SPILL	LARGE SPILL
	As per large spill	Shovel waste material and place into appropriate waste containers/skips, reuse if possible, otherwise dispose of as assessed under GN R 635. Avoid generating dust during handling / clean-up. Note: Spilled waste (incl. any soil clean-up) will have the same hazard as the original waste.
Materials/containers NOT to be Used for Clean-up	None.	

Section 7: Handling and Storage	
Precautions for Safe Handling	Handle in accordance with good industrial hygiene and safety practice. The personal protection and controls identified in Section 8 of the SDS should be used as appropriate. Do not generate airborne dust during handling.

Precautions for Safe Storage	Do not store near food and beverages or smoking material. Store only in designated areas. Apply relevant license conditions and or National Waste Storage Standards, as relevant. Only store in labelled containers that reflect the hazards of the waste.
Compatibility Issues	Acids. Water.

Section 8: Exposure Controls / Personal Protection

	Component	Source	Limit
Exposure Limits	Quartz	OHSA	0.4 mg/m^3 : TWA OEL-RL
	Corundum		15 mg/m^3 : TWA OEL-RL
	Mullite	-	

Engineering	Clean up contaminated areas. Avoid excessive airborne/fugitive dust generation. Use outside in well ventilated areas. Otherwise employ natural or mechanical ventilation	
Personal Protective Equipment	Eye Protection	Safety glasses or goggles.
	Skin Protection	Gloves and clothing covering body are recommended.
	Respiratory Protection	Dust mask /respirator cartridges (NB, selection to be informed by an occupational health practitioner)

Section 9: Physical and Chemical Properties

Appearance		Physical Characteristics (continued)	
Physical state	Solid	Initial boiling point	Not determined
Colour	Grey	Flash point	No flashpoint
Odour		Auto ignition temperature	Not determined
Odour	None	Decomposition temperature	Not determined
Odour threshold	Not applicable	Solubility	Not determined
Physical Characteristics		Partition coefficient: n-octanol/water	Not determined
pH	7.7-8.7	Viscosity	Not determined
Melting point	Not determined	% volatile(s)	Not determined
Flammability	Not flammable	Evaporation rate	Not determined

Section 10: Stability and Reactivity

Chemical stability	This is a stable material under normal conditions.
Possibility of Hazardous Reactions	May react with incompatible substances
Hazardous Decomposition Products	Toxic metal oxides.
Incompatible Substances / Materials	Strong acids and strong bases
Conditions to Avoid	Incompatible materials.

Section 11: Toxicological Information

Likely Routes of Exposure		Dermal, eye contact and dust inhalation (if present)	
Acute Symptoms and Effects	Skin/eye Contact	Can cause skin irritation	
	Inhalation	Minor irritation of the respiratory tract	
	Ingestion / Oral exposure	Not applicable under normal operating conditions.	
Constituent / Ingredient		LD_{50}	LC_{50}

Toxicity	Oral	Dermal	Inhalation (dust)
Ash Waste	> 5000	>5 000 mg/kg	≥ 1 < 5mg/l
Specific Target Organ Toxicity	Prolonged or repeated exposure may cause damage to the lungs through inhalation		

Chronic Toxicity	As above.
Carcinogenicity	Crystalline silicates are known to cause cancer through chronic inhalation.
Reproductive toxicity	-
Irritancy of the waste	The waste may cause respiratory irritation
Sensitization to the waste	-

Section 12: Ecological Information

Constituent Ecotoxicity	LC_{50}	EC_{50}
Ash waste	> 10 mg/L	> 10 mg/L
Persistence and Degradability	Not readily biodegradable	
Bioaccumulation Potential	Not determined	
Mobility in Soil	Not determined	
Other Adverse Effects	None	

Section 13: Disposal Considerations

To be assessed in terms of the South African National Standard for the Assessment of Waste for Landfill Disposal (GN R 635 of 23 August 2013)

Potential Landfill Prohibition / Restrictions	No prohibitions
Treatment Prior to Disposal	Treatment determined as per landfill type

Section 14: Transport Information

Waste Classification	Not classified	Labelling Required	Not required under SANS 10228
UN number			
Shipping Name			
Packing Group			
SANS10228 / Transport Hazard Class(es)			
Marine Pollutant			
Special Instruction(s)			

Section 15: Regulatory Information

Safety, Health and Environmental Legislation / Standards / Guideline	Comments / Applicability
National Environmental Management Act, 1998 (Act 107 of 1998)[NEMA]	Principles, aims and objectives from environmental management in South Africa.
National Environmental Management: Waste Act, 2008 (Act 59 of 2008)[NEM:WA]	Principles, aims and objectives for sound waste management practices in South Africa. Provides for, *inter alia*, the definition of 'waste'
National Waste Classification and Management Regulations (GN R 634 of 23 August 2013)	Covers the requirements for waste management, classification and assessment for disposal to landfill of waste in South Africa.
National Standard for the Assessment of Waste for Disposal to Landfill (GN R 635 of 23 August 2013)	Covers the requirements for the assessment of waste for disposal to landfill; where disposal is relevant.
National Standard for the Disposal of Waste to Landfill (GN R 636 of 23 August 2013)	Covers the requirements (incl. prohibitions) for the disposal of waste to landfill; where disposal is relevant.
SANS 10228 (The identification and classification of dangerous goods for transport)	Standard cover the identification of dangerous goods that are capable of posing significant risk to health and safety or to property

	and the environment; where such is linked to transport requirements for the transport of such goods.
SANS 10232 (Transport of Dangerous Goods – Emergency Information Systems)	Covers the requirements for emergency information systems, placards and emergency information documents relevant to incidents involving dangerous goods.
SANS 10234 (Globally Harmonised System of Classification and Labelling of Chemicals)	Covers the classification of hazardous substances, including waste, for their safe transport, use at the workplace or in the home according to their health, environmental and physical hazards, for example, acute toxicity and flammability.
National Water Act, 1998 (Act 36 of 1998)[NWA]	Promotes the protection of water resources in the National interest.
Occupational Health and Safety Act, 1993 (Act 85 of 1993)[OHSA], as amended	Provides for the health and safety of persons at work.
South African Lead Regulations under the OHSA (GN R 236 of 28 February 2002)	Regulations shall apply to every employer and self-employed person at a workplace where lead is produced, processed, used, handled or stored in a form in which it can be inhaled, ingested or absorbed by any person in that workplace

Section 16: Other Information

Department issuing MSDS: Group Environment Department
Contact: 011 278 9600
Compilation Date: 28 June 2017
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Version 2

The information contained herein is based on the present state of our knowledge.

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