



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

RISK ASSESSMENT IN TERMS OF REGULATION 8 OF THE WASTE EXCLUSION REGULATIONS

APPLICANT	Sasol South Africa (Ltd)
WASTE STREAM OR PORTION OF A WASTE STREAM	Weathered Fine ash
BENEFICIAL USE/S	<p>Sasol Weathered coarse ash may be beneficially utilised in the construction and agricultural sectors. Its uses may include but are not limited to:</p> <ul style="list-style-type: none"> (a) Brickmaking (b) Block making (c) Production of cement
WASTE GENERATING FACILITY OR FACILITIES	
PHYSICAL ADDRESS OF FACILITY OR FACILITIES	Klasie Havenga Road, Sasolburg, 1947
GPS CO-ORDINATES OF WASTE GENERATING FACILITY OR FACILITIES	<p>Coarse Ash dump and the fine ash dam 1,2 & 3 complex</p> <p>26°49'28.34"S: 27°50'11.06"E</p> <p>26°49'50.27"S: 27°50'23.71"E</p> <p>26°50'20.40"S: 27°50'5.04"E</p> <p>26°50'8.79"S: 27°49'33.59"E</p> <p>26°49'48.31"S: 27°49'28.40"E</p> <p>Fine ash Dam 1 & 2 centre point: 26°49'54.98"S: 27°50'10.996"E</p> <p>Fine ash dam 3 centre point: 26°50'6.565"S: 27°50'1.168"E</p> <p>Fine ash dam 4</p> <p>26°50'9.40"S: 27°49'32.30"E</p> <p>26°50'18.07"S: 27°49'57.48"E</p> <p>26°50'27.48"S: 27°49'48.73"E</p>

	<p>26°50'23.55"S: 27°49'43.07"E</p> <p>26°50'33.22"S: 27°49'33.48"E</p> <p>26°50'23.50"S: 27°49'18.98"E</p> <p>Fine ash dam 5</p> <p>26° 50' 43.3962"S: 27° 49' 27.3138"E</p> <p>26° 50' 21.8904" S: 27° 48' 59.5038"E</p> <p>26° 53' 3.6096" S: 27° 48' 45.6012"E</p> <p>26° 50' 54.1458"S: 27° 48' 50.7918"E</p>	
CONTACT PERSON		
NAME	Pieter de Beer (Sasolburg Operations (SO): Senior Manager GLUC, Utilities)	
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* DETAILED DESCRIPTION OF WASTE GENERATING PROCESS	<u>Current Sasolburg Operations (SO) process:</u> Coal is combusted at Sasolburg Operations to produce steam. The ash from the combustion process is pumped in a slurry form to the fine ash dams where it is stored and undergoes weathering.	
PRODUCTION PROCESS FLOW CHART ATTACHED	YES X	NO
IDENTIFICATION OF HAZARDS		
WASTE CLASSIFICATION	HAZARDOUS	GENERAL
	X	
IF WASTE IS HAZARDOUS LIST THE HAZARDS OF THE WASTE	Health hazards due to the presence of lime (CaO) and SiO₂ occurring as quartz	
*A process flow chart must be attached to the process description		

RISK ASSESSEMENT WITHOUT MITIGATION

Activity	Risk Description	Environmental receptors	Impact	Assessment of the risk				Significance
				Probability	Magnitude	Duration	Scale	
1. Loading of ash onto trucks	Loss of containment of ash	Air	<ul style="list-style-type: none"> Localised dust generation Air pollution 	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 20, low environmental significance
2. Transportation of ash	Loss of containment of ash	Air	<ul style="list-style-type: none"> Dust generation along transportation route Air pollution 	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Local: 2	Inherent: 25, low environmental significance
		Land	<ul style="list-style-type: none"> Load of ash deposited on land in the vicinity of the road Land pollution 	Inherent: Medium probability: 3	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 21, low environmental significance
3. Off-loading of ash	Loss of containment of ash	Water	<ul style="list-style-type: none"> Load of ash deposited in water body in the vicinity of the road Water pollution 	Inherent: Medium probability: 3	Inherent: Moderate: 6	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 27, low environmental significance
		Air	<ul style="list-style-type: none"> Localised dust generation Air pollution 	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 20, low environmental significance
4. Storage of ash	Loss of containment of ash	Air	<ul style="list-style-type: none"> Localised dust generation Air pollution 	Inherent: Highly probable: 4	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 16, low environmental significance
		Land	<ul style="list-style-type: none"> Ash carried by run-off deposited on land in the vicinity of the ash storage area Land degradation 	Inherent: Medium probability: 3	Inherent: Minor: 2	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 15, low environmental significance
		Water	<ul style="list-style-type: none"> Ash carried by run-off deposited in storm water channels and water body in the vicinity of the ash storage area 	Inherent: Low probability: 2	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Residual: Local: 2	Inherent: 16, low environmental significance

5. Handling of ash (i.e. screening, crushing, blending etc.)	Loss of containment of ash	Air	<ul style="list-style-type: none"> Localised dust generation Air pollution 	Inherent: Definite: 5	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 20, low environmental significance
a. Brickmaking; b. Block making; c. Production of cement.	The point at which coal ash enters the production process of bricks, blocks and cement to the actual products is outside the scope of this risk assessment. The incorporation of coal ash into these existing production processes is matured. The quality of the products from these processes is regulated by relevant standards.							
6. Disposal of ash and ash containing products	Loss of containment of ash	Air	<ul style="list-style-type: none"> Localised dust generation Air pollution 	Residual: Medium probability: 3	Inherent: Minor: 2	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 15, low environmental significance
	Land	Land	<ul style="list-style-type: none"> Load of ash disposed illegally on land Land degradation 	Inherent: Medium probability: 3	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 21, low environmental significance
	Water	Water	<ul style="list-style-type: none"> Illegally disposed ash reaching water body in the vicinity of the dumping area Water pollution 	Inherent: Medium probability: 3	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 21, low environmental significance
7. Residual ash stockpiled after closure, decommissioning or change of ownership of user facility	Loss of containment of ash	Air	<ul style="list-style-type: none"> Localised dust generation Air pollution 	Inherent: Medium probability: 3	Inherent: Minor: 2	Inherent: Immediate: 1	Inherent: Site only: 1	Inherent: 12, low environmental significance
	Land	Land	<ul style="list-style-type: none"> Ash carried by run-off deposited on land in the vicinity of the ash storage area Land degradation 	Inherent: Medium probability: 3	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Inherent: Site only: 1	Inherent: 21, low environmental significance
	Water	Water	<ul style="list-style-type: none"> Ash carried by run-off deposited in storm water channels and water body in the vicinity of the ash storage area 	Inherent: Low probability: 2	Inherent: Low: 4	Inherent: Short term (0 to 12 months): 2	Residual: Local: 2	Inherent: 16, low environmental significance

The following factors and criteria must be used to assess the impacts of the activities:

Criteria	
MAGNITUDE (Severity)	DURATION
10 - Very high	5 - Permanent (longer than 10 years)
8 - High	4 - Long-term (5 to 10 years)
6 - Moderate	3 - Medium-term (12 months to 5 years)
4 - Low	2 - Short-term (0 to 12 months)
2 - Minor	1 - Immediate
SCALE	PROBABILITY (Likelihood)
5 - International	5 - Definite
4 - National	4 - Highly probable
3 - Regional	3 - Medium probability
2 - Local	2 - Low probability
1 - Site only	1 - Improbable
0 - None	0 - None

Magnitude

Magnitude measures the size of the impact

Duration

Duration refers to the lifetime of the impact i.e. how long it will last

Scale

The scale refers to the extent of the impact.

Probability

The probability refers to the chance of impact to occur. The potential impact could be most likely to occur, unlikely, etc.

Assessment of Significance of impact

Significance rating of the potential impacts illustrates the importance of the impact itself. The size of area affected by pollution may be extremely high but the significance of this effect is dependent on the concentration or level of pollution in that area. In order to determine the significance of impact, the following method was used:

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Scale}) \times \text{Probability}$$

The values of SP are then ranged as follows:

Rating	Description
SP >60	Indicates high environmental significance An impact which could influence the decision about whether or not to proceed with the activities regardless of any possible mitigation.
SP 30 – 60	Indicates moderate environmental significance An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP <30	Indicates low environmental significance Impacts with little real effect and which will not have an influence on or require modification of the activities.
+	Positive Impact An impact that is likely to result in positive consequences/effects

I, Pieter de Beer hereby declare that I have read the completed the Risk Assessment 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).

Applicant (Full names) Pieter de Beer

Designation Sasolburg Operations (SO) Senior Manager GLUC, Utilities

Signature 

Date 02/09/18 Place SASOLBURG

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Date Received				
Decision Taken	Authorised		Not Authorised(provide reasons)	
Reference Number				