



# environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

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

<b>APPLICANT</b>	Kelvin Power (Pty) LTD
<b>WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE</b>	Fly ash Coarse ash
<b>BENEFICIAL USE/S</b>	Cement, bricks and block making Geopolymers Filler applications Zeolites Production Metal and mineral extraction Mineral fibre production Road Construction Mine backfilling Treatment of acid mine drainage Treatment of leachate at landfill site Soil amelioration.
<b>WASTE GENERATING FACILITY OR FACILITIES</b>	
<b>PHYSICAL ADDRESS OF FACILITY OR FACILITIES</b>	3 Zuurfontein Road, Kempton Park.
	1620
	Gauteng Province
<b>GPS CO-ORDINATES OF WASTE GENERATING FACILITY OR FACILITIES</b>	Kelvin Power Station
	-26° 6' 55.7568"
	28° 11' 45.8052"
<b>CONTACT PERSON</b>	
<b>NAME</b>	Simphiwe Khuluse
<b>ADDRESS</b>	3 Zuurfontein Road, Kempton Park, 1620
	Gauteng Province
<b>EMAIL ADDRESS</b>	simphiwe.khuluse@kelvinpower.com

<b>TELEPHONE</b>	+27 (11) 573-2500	
<b>* DETAILED DESCRIPTION OF WASTE GENERATING PROCESS</b>	Station B uses a pulverised fine-coal fraction for heat generation, which results in a fine ash byproduct. Ash is slurried and pumped into Ash Dam A. Kelvin Power has a dry silo where approximately 10% of the ash can be collected by cement manufacturer as raw material, thereby facilitating waste minimisation (both in terms of ash and water use) at the power station.	
<b>PRODUCTION PROCESS FLOW CHART ATTACHED</b>	<del>YES</del>	<b>NO</b>
<b>WASTE CLASSIFICATION</b>	<b>HAZARDOUS</b>	<del>GENERAL</del>
<b>IF WASTE IS HAZARDOUS LIST THE HAZARDS OF THE WASTE</b>	Not applicable	
<b>*A process flow chart must be attached to the process description</b>		

## RISK ASSESSEMENT WITHOUT MITIGATION

Activity	Risk Description	Environmental Receptors	Impact	Magnitude	Duration	Scale	Probability	SP rating
Loading of ash onto trucks	Dust generation during transfer of ash from silos to trucks resulting in an air quality impact due to increase in particulate matter concentrations	Air	Moderate	6	1	1	4	32
	Spillage of ash outside designated loading areas contaminating surface runoff and storm water	Surface water	Low	6	2	1	3	27
	Spillage of ash outside designated loading areas contaminating soils	Soil	Low	4	3	1	2	16
	Dust inhalation (respirable fraction)	Humans	Moderate	8	1	1	3	30
	Skin contact with ash with pH > 11	Humans	Moderate	6	1	1	4	32
Transportation of ash	Dust generation during transportation of ash	Air	Moderate	8	1	2	4	44
	Spillage of ash during transportation along roads contaminating surface runoff and storm water	Surface water & Aquatic life	Low	4	2	3	3	27
	Spillage of ash during transportation along roads contaminating soil	Soil	Low	4	2	3	3	27
Handling of ash	Dust generation during handling of ash	Air	Moderate	8	1	2	4	44
	Dust inhalation	Humans	Moderate	8	1	1	4	40
	Skin contact (pH 11)	Humans	Moderate	8	1	1	4	40
Off-loading of ash	Dust generation during transfer of ash from trucks to new storage area	Air	Moderate	8	1	2	4	44

Storage of ash	Poor/no lining of storage area resulting in contaminants of concern leaching to groundwater	Groundwater	Moderate	6	4	2	3	36
	Contaminated surface runoff or leachate from Ash during rainfall entering stormwater system	Surface water	Moderate	8	2	2	3	36
	Poor/no lining of storage area resulting in contaminants of concern leaching into soil	Soil	Moderate	8	4	1	4	52
	Dust generation during conducive weather conditions	Air	Moderate	8	1	2	4	44
	Ignition of the clinker ash may pose a risk to workers working at or near ash storage areas	Humans	Moderate	8	2	2	4	48

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 <b>high</b> 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 <b>moderate</b> 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 <b>low</b> environmental significance	Impacts with little real effect and which will not have an influence on or require modification of the activities.
+	<b>Positive impact</b>	An impact that is likely to result in positive consequences/effects



I, Paul Gilliv 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) Paul Gilliv

Designation General Manager

Signature [Handwritten Signature]

Date 7/4/20 Place Kempton Park

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