



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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

APPLICANT	GLENCORE OPERATIONS SOUTH AFRICA (PTY) LTD's - COAL DIVISION: TWEEFONTEIN
WASTE STREAM OR PORTION OF A WASTE STREAM TO BE EXCLUDED FROM THE DEFINITION OF WASTE	Mine Overburden
BENEFICIAL USE/S	Backfilling into open pit created by opencast mining
WASTE GENERATING FACILITY OR FACILITIES	
PHYSICAL ADDRESS OF FACILITY OR FACILITIES	Farm Tweefontein 13 IS, Witbank District
GPS CO-ORDINATES OF WASTE GENERATING FACILITY OR FACILITIES	26° 0'51.84" Latitude; 29° 7'56.39" Longitude
	26° 1'52.18" Latitude; 29° 8'51.29" Longitude
	26° 3'11.56" Latitude; 29° 8'58.38" Longitude
CONTACT PERSON	
NAME	Thys de Bruin
ADDRESS	Farm Tweefontein 13 IS, Witbank District

EMAIL ADDRESS	Thys.debruin@glencore.co.za			
TELEPHONE	013 686 3305			
* DETAILED DESCRIPTION OF WASTE GENERATING PROCESS	Unbeneficiated virgin rock material overlying coal deposits removed during mining activities, temporarily stored on surface to be used for rehabilitation ('backfilling').			
PRODUCTION PROCESS FLOW CHART ATTACHED	<table border="1"> <tr> <td>YES</td> <td style="text-align: center;">✓</td> <td>NO</td> </tr> </table>	YES	✓	NO
YES	✓	NO		
WASTE CLASSIFICATION	<table border="1"> <tr> <td>HAZARDOUS</td> <td style="text-align: center;">✓</td> <td>GENERAL</td> </tr> </table>	HAZARDOUS	✓	GENERAL
HAZARDOUS	✓	GENERAL		
IF WASTE IS HAZARDOUS LIST THE HAZARDS OF THE WASTE	Aluminium and iron exceed 1% cut-off values as per SANS10234. Mn exceed LCT0			
*A process flow chart must be attached to the process description				

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:

Significance Points (SP) = (Magnitude + Duration + Scale) x 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

RISK ASSESSMENT WITHOUT MITIGATION – TWEEFONTEIN COMPLEX MINE OVERBURDEN

Activity	Risk description	Environmental Receptors	Assessment of Risk					Significance
			Impact	Probability	Magnitude	Duration	Scale	
Loading	Loading of material onto trucks	Air	Windblown particles - Localised dust generation and air pollution	3	3	2	1	18
Storage	Accidental spillage onto the environment	Soil	Soil contamination	2	6	3	1	20
		Surface water	Contamination of surface water	2	6	3	1	20
		Groundwater	Contamination of groundwater	2	6	3	1	20
		Aquatic ecosystem	Reduced aquatic ecosystem productivity	2	6	3	1	20
	Leachate from stockpiled material during rainfall	Soil	Soil contamination	4	6	3	1	40
		Surface water	Material carried by run-off deposited in storm water channels and	2	6	3	1	20

Activity	Risk description	Environmental Receptors	Assessment of Risk					Significance
			Impact	Probability	Magnitude	Duration	Scale	
			water body in the vicinity of the storage area					
		Groundwater	Seepage into groundwater and contamination	4	6	3	1	40
		Aquatic ecosystem	Reduced aquatic ecosystem productivity	2	6	3	1	20
Backfilling	Development of poor leachate quality during the operational phases of mining	Soil	Soil contamination	1	2	2	1	10
		Surface water	Contamination of surface water	1	2	2	1	10
		Groundwater	Contamination of groundwater	1	2	2	1	10
		Aquatic ecosystem	Reduced aquatic ecosystem productivity	1	2	2	1	10
Backfilling	Development of poor leachate quality during the closure phases	Soil	Soil contamination	4	6	3	1	40
		Surface water	Contamination of surface water	4	6	3	1	40

Activity	Risk description	Environmental Receptors	Assessment of Risk					Significance
			Impact	Probability	Magnitude	Duration	Scale	
		Groundwater	Contamination of groundwater	4	6	3	1	40
		Aquatic ecosystem	Reduced aquatic ecosystem productivity	4	6	3	1	40

x


I, JM de Bruin 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) Johannes Matthys de Bruin

Designation General Manager

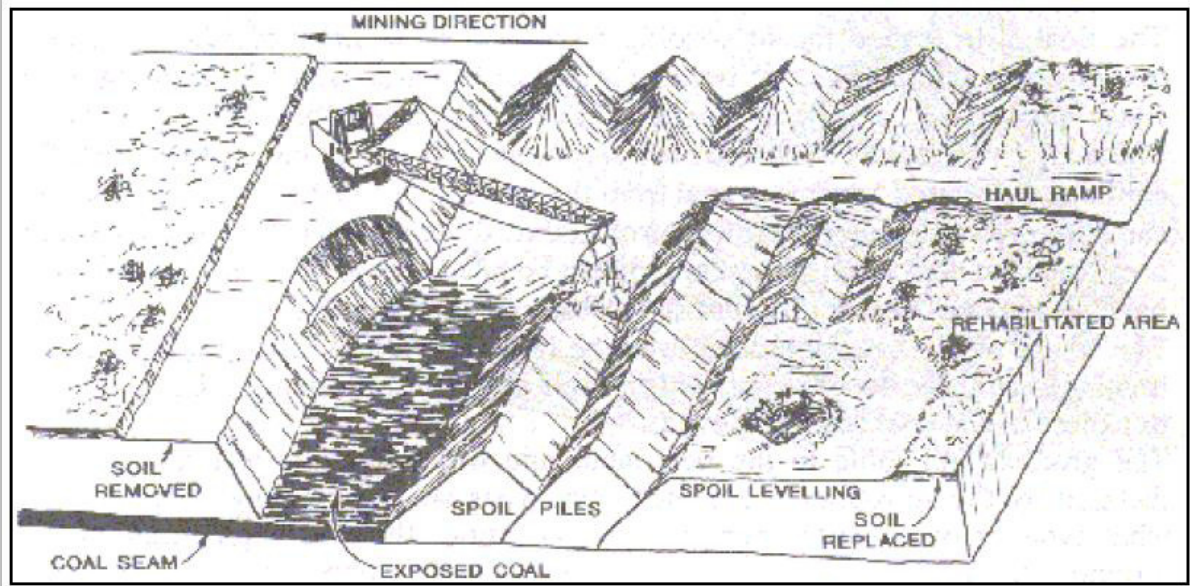
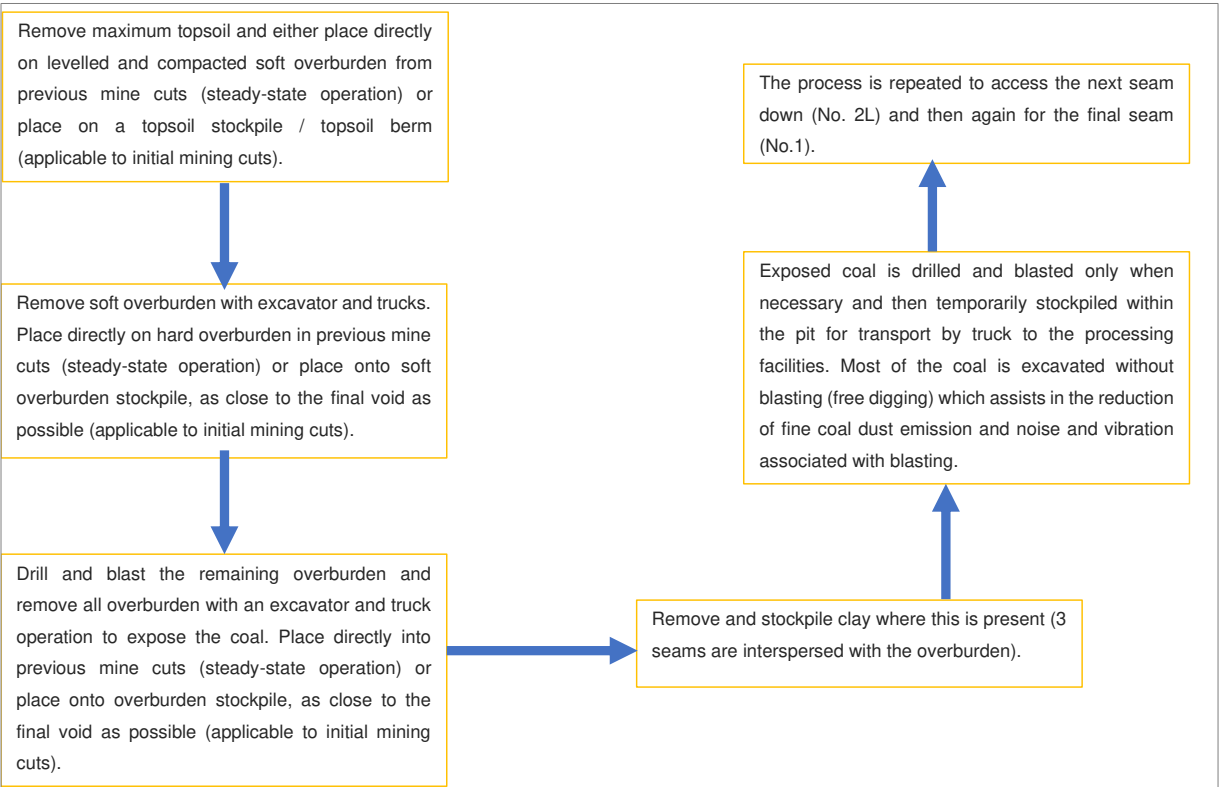
x

Signature 

Date 15-01-2021 Place Tweefontein

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



Process Flow illustration of the overburden generation and storage

