

mineral resources

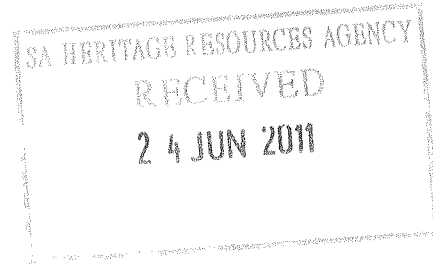
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

case: 1924

Private Bag X6093,
Kimberley, 8300,
Tel: (053) 807 1700, Fax: (053)
8325 631
First Floor, Liberty Corner,
29-31 Currey Street,
Kimberley 8301

Directorate Mineral Regulation: Northern Cape.
Enquiries: Mr.L.S Malatjie E-Mail: livhuwani.malatjie@dmr.gov.za
Sub Directorate: Mine Environmental Management Ref: NC30/5/1/3/3/2/1/ 2050 EM

The Director
South African Heritage Resources Agency
PO Box 4637
CAPE TOWN
8000



Attention: Nonofho Ndobochani

CONSULTATION IN TERMS OF SECTION 40 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 2002, (ACT 28 OF 2002) IN RESPECT OF DIAMONDS FOR THE APPROVAL OF AN ENVIRONMENTAL MANAGEMENT PLAN FOR A MINING PERMIT ON CERTAIN PORTION OF THE FARM MEY'S DAM NO.68, SITUATED IN THE MAGISTERIAL DISTRICT OF CARNAVON, NORTHERN CAPE REGION.


APPLICANT: NATIONAL RESEARCH FOUNDATION

Attached herewith, please find a copy of an EMP received from the above-mentioned applicant, for your comments.

It would be appreciated if you could forward any comments or requirements your Department may have to this office and to the applicant before **29th July 2011** as required by the Act.

Consultation in this regard has also been initiated with other relevant State Departments. In an attempt to expedite the consultation process please contact **Mr Livhuwani Malatjie** of this office to make arrangements for a site inspection or for any other enquiries with regard to this application.

Your co-operation will be appreciated.

pp. 
REGIONAL MANAGER: MINERAL REGULATION
NORTHERN CAPE REGION

31/05/2011

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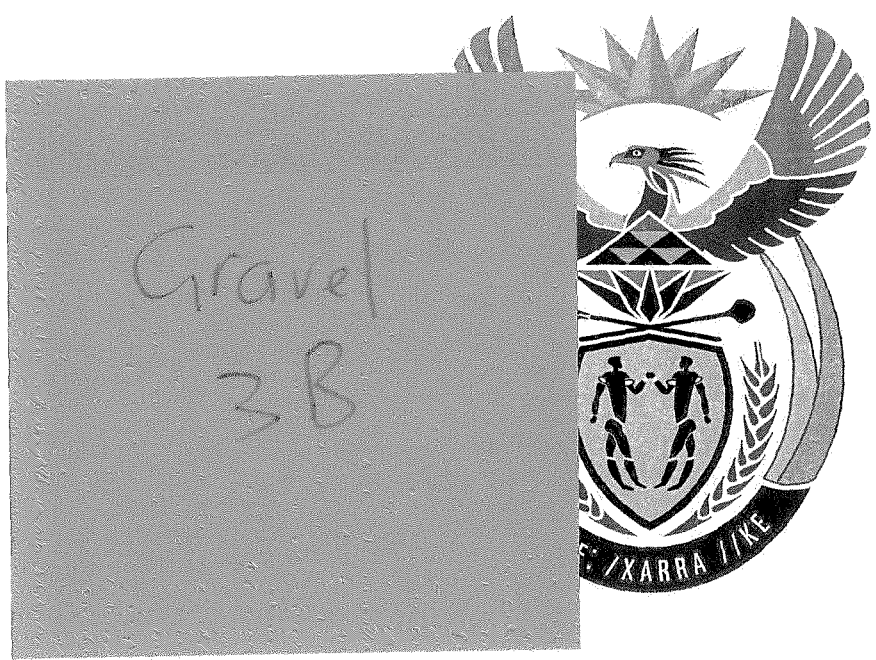
DEPARTMENT OF MINERALS AND ENERGY

Documents received in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
NORTHERN CAPE REGION
27 MAY 2011
MINISTRY

ENVIRONMENTAL MANAGEMENT PLAN

Submitted in support of application for a prospecting right

Section 39 and Regulation 52 of the Minerals and Petroleum Resources Development Act, 2002
(Act 28 of 2002)



Application for a:	Prospecting Right	
	Mining Permit	X

Applicant: National Research Foundation (SKA SA) Quarry & Borrow pit

Farm: A Certain Portion of Farm Mey's Dam Nr 68

District: Carnarvon

Mineral: Granular materials (stone aggregate)

Date: May 2011

Section H:

H Undertaking Page 62

Section J:

J Approval Page 63

Annexures:

Annexure 1	-	Layout of the Prospecting Area
Annexure 2	-	Proof of Public Participation
Annexure 3		Mitigation Measures
Annexure 4		Cost Breakdown
Annexure 5		Environmental Features
Annexure 6		Photos of the Site
Annexure 7		Proof of no Land Claims

A.1 INTRODUCTION

This document aims to provide a simplified national standard for applicants for prospecting rights and mining permits to comply with the relevant legislation and environmental regulations as apply to their respective applications in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)(MPRDA).

Applicants in this sector of the mining industry typically disturb smaller surface areas of land, whether drilling boreholes, small trenches, or mining on a small area, less than 1,5 hectares of land, under a mining permit as contemplated in Section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)

A.2 SCOPE

This document is intended for use by applicants for mining permits and prospecting rights.

Typically, operations in this sector of the mining industry:

- Use little or no chemicals to extract mineral from ore,
- Work on portions of land of 1,5 hectares in size or smaller,
- Disturb the topography of an area somewhat but have no significant impact on the geology

Management Plan (Section F) of the document is legally binding once approved and, in the undertaking contained in Section H, the applicant effectively agrees to implement all the measures outlined in this Environmental Management Plan.

A.5 LEGISLATION/ REGULATIONS

The relevant sections of Mineral and Petroleum Resources Development Act and its supporting Regulations are *summarised below* for the information of applicants. The onus is on the applicant to familiarise him/herself with the provisions of the full version of the Mineral and Petroleum Resources Development Act and its Regulations.

SECTION OF ACT	LEGISLATED ACTIVITY/ INSTRUCTION/ RESPONSIBILITY OR FAILURE TO COMPLY	PENALTY IN TERMS OF SECTION 99
5(4)	No person may prospect, mine, or undertake reconnaissance operations or any other activity without an approved EMP, right, permit or permission or without notifying land owner	R 100 000 or two years imprisonment or both
19	Holder of a Prospecting right must: lodge right with Mining Titles Office within 30 days; commence with prospecting within 120 days, comply with terms and conditions of prospecting right, continuously and actively conduct prospecting operations; comply with requirements of approved EMP, pay prospecting fees and royalties	R 100 000 or two years imprisonment or both
20(2)	Holder of prospecting right must obtain Minister's permission to remove any mineral or bulk samples	R 100 000 or two years imprisonment or both
26(3)	A person who intends to beneficiate any mineral mined in SA outside the borders of SA may only do so after notifying the Minister in writing and after consultation with the Minister.	R 500 000 for each day of contravention
28	Holder of a mining right or permit must keep records of operations and financial records AND must submit to the DG: monthly returns, annual financial report and a report detailing compliance with social & labour plan and charter	R 100 000 or two years imprisonment or both
29	Minister may direct owner of land or holder/applicant of permit/right to submit data or information	R 10 000
38(1)(c)	Holder of permission/permit/right MUST manage environmental impacts according to EMP and as ongoing part of the operations	R 500 000 or ten years imprisonment or both.
42(1)	Residue stockpiles must be managed in prescribed manner on a site demarcated in the EMP	A fine or imprisonment of up to six months or both
42(2)	No person may temporarily or permanently deposit residue on any other site than that demarcated and indicated in the EMP	A fine or imprisonment of up to six months or both
44	When any permit/right/permission lapses, the holder may not remove or demolish buildings, which may not be demolished in terms of any other law, which has been identified by the Minister or which is to be retained by agreement with the landowner.	Penalty that may be imposed by Magistrate's Court for similar offence
92	Authorised persons may enter mining sites and require holder of permit to produce documents/ reports/ or any material deemed necessary for inspection	Penalty as may be imposed for perjury
94	No person may obstruct or hinder an authorised person in the performance of their duties or powers under the Act.	Penalty as may be imposed for perjury

NDA	National Department of Agriculture
NWA	National Water Act, Act 36 of 1998
Pit	Any open excavation
“Porrel”	The term used for the sludge created at alluvial diamond diggings where the alluvial gravels are washed and the diamonds separated in a water-and-sand medium.
Topsoil	The layer of soil covering the earth which- <ul style="list-style-type: none"> (a) provides a suitable environment for the germination of seed; (b) allows the penetration of water; (c) is a source of micro-organisms, plant nutrients and in some cases seed; and (d) is not of a depth of more than 0,5 metres or such depth as the Minister may prescribe for a specific prospecting or exploration area or mining area.
Trench	A type of excavation usually made by digging in a line towards a mechanical excavator and not pivoting the boom – a large, U-shaped hole in the ground, with vertical sides and about 6 – 8 metres in length. Also a prospecting trench.
Vegetation	Any and all forms of plants, see also Fauna
DWAF	The Department of Water Affairs and Forestry – both national office and their various regional offices, which are divided across the country on the basis of water catchment areas.
MPRDA	the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
EMPlan	An Environmental Management Plan as contemplated in Regulation 52 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) – this document.

A.8 EXECUTIVE SUMMARY

The international bid to construct the Square Kilometre Array (hereafter SKA) radio telescope is between South Africa and Australia. SKA SA is a business unit of the National Research Foundation (hereafter NRF). The proposed core site in South Africa for the SKA is in the Karoo, approximately 78 km north from the town of Carnarvon in the Northern Cape.

As a pathfinder to the SKA, the MeerKAT (Karoo Array Telescope) telescope and associated infrastructure must be built. This is already underway. In February 2009, an Environmental Impact Assessment (hereafter EIA) was conducted and submitted to the Northern Cape Department of Tourism, Environment and Conservation. In July 2009 a positive Record of Decision (hereafter RoD) was granted for the MeerKAT construction.

To complete the MeerKAT antenna foundations and associated infrastructure, gravel material will be required for the construction of internal gravel roads to the MeerKAT site and dishes.

This Environmental Management Plan (hereafter EMP) forms part of the mining permit application to mine a gravel quarry to obtain material as described above. A closure plan will only be submitted after the operational phase has commenced.

A detailed environmental aspect and impact register has been developed to identify all the potential environmental impacts of the operations. The identified impacts were rated and the most significant aspects were identified. Based on the rating, mitigation measures were proposed to address the specific environmental aspects. Rehabilitation will be an ongoing process and will take place concurrent with mining.

- The site has been used for some type of grazing in the past and has been significantly disturbed due to intensive sheep grazing activities.
- The site is situated in a flat riverbed drainage line that leads to a small dam south of the proposed site. Stone tools were identified very close to the dam wall.
- The indigenous vegetation present on site is not diverse and is surrounded by extensive homogenous vegetation.
- One drainage line cuts across the site, but no wetlands are present.
- The site is located just to the south of a small dam in a drainage line. Below the dam wall and above the dam wall a large number of stone tools can be found that appears to be relatively undisturbed.

Summary of Public Participation

A comprehensive public participation process (PPP) was undertaken as part of the project. The PPP was undertaken according to the MPRDA Regulations. Refer to Annexure 2 for a description of the PPP as well as proof and copies of the site notices, newspaper notices and public meetings. An inquiry has been made to the Department of Rural Development and Land Reform regarding any land claims on the site. According to the Department of Rural Development and Land Reform “no claims lodged on the mentioned property”. A copy of the letter is included in Annexure 7.

Conclusion and Recommendations

The proposed quarry activities may impact somewhat on the biodiversity pattern. It must be noted that some evidence of misuse by sheep grazing is present on Gravel Quarry 3. The site is located just to the south of a small dam in a drainage line. Below the dam wall and above the dam wall a large number of stone tools can be found that appears to be relatively undisturbed. As the tools do not occur in a ‘midden’ context it is of low cultural significance. If mining takes place, a mitigation process will have to be adhered to. A Stone Age specialist will have to be appointed to follow the mitigation process as described by the National Heritage Resources Act 25 of 1999. No mining may take place within the drainage line in Gravel Quarry 3. When considering this statement, the proposed gravel quarry site is considered to be moderately sensitive.

Figure 1: Site Layout Plan – Refer to Addendum 1

B 2.7 His/ her Postal address	P.O. Box 522940 Saxonwold Johannesburg 2132
B 2.8 Current uses of surrounding areas.	
Pre-mining land use is vacant or unspecified. Some evidence of misuse by sheep grazing is present on this quarry. There are also no existing structures on site.	
B 2.9 Are there any other existing land uses that impact on the environment in the proposed prospecting area?	
Stock and game farming in the area leads to overgrazing which impacts on the environment.	
B 2.10 What is the name of the nearest town?	
Van Wyksvlei	

B3(1) Description of prospecting operation

Mining of borrow pits for granular (alluvial) materials will be by means of dozing and /or excavating after the securing of the particular area /perimeter. Dozers will load the material into haul trucks. No blasting will take place.

The product will be transported with trucks to the site of use. The quarry is next to the main gravel road and as a result no additional roads will be needed.

B3(2) Description of topographical and environmental features likely to be impacted upon.

Refer to Annexure 5 for a complete description of the environmental features likely to be impacted upon.

Amphibians and Reptiles:

Approximately 38 reptile and 8 amphibian species are likely to inhabit the area. The following reptiles were observed on site during the site survey:

- *Trachylepis capensis* (Cape Skink); and
- *Trachylepis varia* (Variable Skink).

The only Red Listed reptile species which may occur within the study area is the Fisk's House Snake (*Lamprophis fiskii*); the IUCN (2001) lists this species as Vulnerable. Very little is known of the habitat requirements of this species and as a result it cannot be confirmed that the species is likely to occur within the study area.

No amphibian species were observed during the surveys. No Red Listed amphibian species are known to occur in the area of the site.

Mammals:

Several mammal species are supported in the Nama Karoo. The big mammal species however were replaced with sheep. Introduced Springbok and Kudu are the largest mammal species occurring within the area. Some 46 mammal species are known to occur in the bigger area (Smithers 1983). The following mammal species were observed on site during the survey:

- *Hystrix africaeaustralis* (Porcupine spoor);
- *Raphicerus campestris* (Steenbok); and
- *Caracal caracal* (Caracal spoor).

Various small borrowing pits were observed within the study area indicating rodent populations.

Bird:

189 bird species are known to occur in the bigger area (Hockey *et al*, 2006). The following species were observed during the survey within the study area:

- *Alopochen aegyptiaca*;
- *Buteo rufofuscus*;
- *Corvus albus*
- *Oena capensis*;
- *Philetairus socius*;
- *Ardea cinerea*;
- *Columba guinea*;
- *Elanus caeruleus*;
- *Falco tinnunculus*;
- *Pterocles namaqua*;
- *Upupa Africana*;
- *Mirafrja albescens*;
- *Hirundo rustica*;

A table identifying the impact and proposed mitigation has been compiled and is reflected in section 6.7 and 6.8 below.

ENVIRONMENTAL ELEMENT/ IMPACTOR			
	VALUE	TICK	OFFICE USE
C 2.1 What will the ultimate depth of the proposed prospecting operations be?	0 – 5m	X	2
	6 – 10m		4
	10 – 25m		8
	25m +		10
C 2.2 How large will the <i>total</i> area of all excavations be?	1.169		ha
	VALUE	TICK	OFFICE USE
C 2.3 How large will each excavation be before it is filled up?	<10 X 10m		2
	<20 X 20m		4
	>20 X 20m	X	8
C 2.4 How many <i>prospecting</i> boreholes or trenches will there be?			
Not applicable			
	VALUE	TICK	OFFICE USE
C 2.5 Will employees prepare food on the site?	Yes		4
Food will be prepared at the contractor's camp	No	X	0
	VALUE	TICK	OFFICE USE
C 2.6 Will water be extracted from a river, stream, dam or pan for use by the proposed operation?	Yes		4
	No	X	2
C 2.7 If so, what is the name of this water body?			
NOT APPLICABLE			
C 2.8 If water will not be extracted from an open surface source, where will it be obtained?			
The mining activities will not use water. Water will be transported and stored at the quarry sites for drinking. This water will be received from the contractor's site camp at Losberg.			
	VALUE	TICK	OFFICE USE
C 2.9 How much water per day will the <i>mineral processing</i> operation require?	1 000 – 10 000 L		2
Not applicable, no mineral processing taking place.	20 000 – 40 000 L		3
	40 000 –		5

topsoil be placed on the road surface?			
	No	X	0
C.3 TIME FACTOR			
	VALUE	TICK	OFFICE USE
C 3.1 For what time period will prospecting operations be conducted on this particular site?	0 – 6 months		2
This is application for a mining permit.	6 – 12 months		4
	12 – 18 months		6
	18 – 24 months		8
	>24 months		10
C.4 HOW WILL THE PROPOSED OPERATION IMPACT ON THE SOCIO-ECONOMIC ENVIRONMENT? (REGULATION 52(2)(b))			
ELEMENT/ IMPACTOR	VALUE	TICK	OFFICE USE
C 4.1 How many people will be employed?	5		
C 4.2 How many men?	4		
C 4.3 How many women?			
	1		
C 4.4 Where will employees be obtained? (Own or employed from local communities?)	Own	X	2
	Local	X	4
C 4.5 How many hours per day will employees work?	Sunrise→ Sunset	X	4
	Less		2
	More		8
	VALUE	TICK	OFFICE USE
C 4.6 Will operations be conducted within 1 kilometre from a residential area	Yes		6
A farmhouse is nearby; however, this belongs to SKA SA and will be used as offices and NOT for residential use.	No	X	1
	VALUE	TICK	OFFICE USE

<p>C.6.5 Disposal of waste material (Regulation 69) Indicate on your plan where waste will be dumped in relation to the beneficiation works/ washing pans Also indicate below how domestic waste material will be managed.</p>
<p>No beneficiation works or washing will take place. Domestic waste and / or general waste will be generated and contained in skips or bins.</p>
<p>C.6.6 Soil pollution and erosion control (Regulation 70)</p>
<p>6.6.1 Indicate how topsoil will be handled on the area.</p>
<p>All topsoil will be removed where the gravel quarries are situated. Note that these soils are not favourable for agricultural activities.</p>
<p>6.6.2 Describe how spills of oil, grease, diesel, acid or hydraulic fluid will be dealt with.</p>
<p>The pollution of soil due to mining activities includes spillages / leakages of lubricants during operation of vehicles, dozers and other mining equipment. The volumes that could spill will not be more than 50 l which will be contained to a specific area.</p>
<p>6.6.3 Briefly describe the storage facilities available for the above fluids:</p>
<p>All chemical and hazardous substances will be stored in a sealed and lockable container.</p>

SECTION	ACTIVITY	ASPECT	IMPACT DESCRIPTION	ASSESSMENT PRE-MITIGATION					MITIGATION	TIMEFRAMES	ASSESSMENT POST-MITIGATION				
				EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE			EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE
			Disturbance of water course	Local	Long term	Improbable	Very low	Low	During mining surface watercourses are disturbed at Gravel Quarry 3. No mining may take place within the drainage line in Gravel Quarry 3.	During LoM	Local	Long term	Improbable	Very low	Low
		Air Quality	Dust and emissions	Local	Long term	Probable	Low	Moderate	Refer to Annexure 3 for air quality management measures.	During LoM	Local	Long term	Improbable	Very low	Low
		Noise	Disturbance of neighbouring residents	Local	Long term	Probable	Low	Moderate	Refer to Annexure 3 for Noise management measures.	During LoM	Local	Long term	Improbable	Very low	Low
		Sites of Archaeological and Cultural Interests	Disturbance of sites	Local	Long term	Probable	Low	Moderate	No sites were observed.	During LoM	Local	Long term	Improbable	Very low	Low
		Regional Socio-Economic	Safety hazard to workers	Local	Long term	Probable	High	Moderate	The contractor must adhere to all Mine Health and Safety requirements.	During the LoM	Local	Long term	Improbable	Low	Low
	Removal of topsoil	Soil	Loss of topsoil	Site	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for Topsoil stripping and replacement	During the LoM	Site	Long term	Improbable	Low	Low
			Soil erosion	Site	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for erosion control measures.	During the LoM	Local	Long term	Probable	Very low	Moderate

SECTION	ACTIVITY	ASPECT	IMPACT DESCRIPTION	ASSESSMENT PRE-MITIGATION					MITIGATION	TIMEFRAMES	ASSESSMENT POST-MITIGATION				
				EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE			EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE
		Soils	Soil compaction due to vehicles	Site	Long term	Probable	Low	Moderate	Refer to Annexure 3 for Soil Compaction prevention measures.	During the LoM	Site	Long term	Improbable	Low	Low
		Land Use	Road disturbances and mine traffic	Local	Long term	Probable	Low	Moderate	Mine traffic will be regulated.	During the LoM	Site	Long term	Improbable	Low	Low
		Natural Vegetation	Damage due to off road driving	Site	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for biodiversity and ecological management measures, and Annexure 3 for soil compaction management measures.	During the LoM	Local	Long term	Improbable	Low	Low
Transport and Conveyance	Road transportation	Air Quality	Dust generation and emissions	Local	Long term	Probable	Low	Moderate	Refer to Annexure 3 for air quality management measures.	During LoM	Local	Long term	Improbable	Very low	Low
		Noise	Disturbance of neighbouring residents	Local	Long term	Probable	Low	Moderate	Refer to Annexure 3 for Noise management measures.	During LoM	Local	Long term	Improbable	Very low	Low

SECTION	ACTIVITY	ASPECT	IMPACT DESCRIPTION	ASSESSMENT PRE-MITIGATION					MITIGATION	TIMEFRAMES	ASSESSMENT POST-MITIGATION				
				EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE			EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE
Water and Effluent Management	Sanitary facilities	Soils, Surface Water and Groundwater	Soil, surface water and groundwater contamination by spills	Site	Long term	Probable	Moderate	Moderate	Refer to: Annexure 3 for Soil Contamination management measures, Annexure 3 for Surface Water Quality management measures Annexure 3 for Sewerage management measures, Annexure 3 for Compliance with GN 704 Regulations; and Annexure 3 for Handling and Clean-Up of Spills.	During the LoM	Site	Long term	Improbable	Low	Low
Chemical and Hazardous Substances Management	Operation of chemical and hazardous substances management facilities	Soils, Surface Water and Groundwater	Soil, surface water and groundwater contamination by spills	Site	Long term	Probable	Moderate	Moderate	Refer to: Annexure 3 for Soil Contamination management measures, Annexure 3 for Surface Water Quality management measures, Annexure 3 for the Handling and Storage of Hazardous Substances, Annexure 3 for Bund Wall Specifics management measures, Annexure 3 for Maintenance of Machinery management measures, and Annexure 3 for Handling and Clean-Up of Spills.	During the LoM	Site	Long term	Improbable	Low	Low
Chemical and Hazardous Substances Management	Operation of chemical and hazardous substances management facilities	Air Quality	Fire Hazard	Local	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for Fire management measures.	During LoM	Local	Long term	Improbable	Low	Low
		Regional Socio-Economic		Local	Long term	Probable	High	Moderate		During LoM	Local	Long term	Improbable	Low	Low

SECTION	ACTIVITY	ASPECT	IMPACT DESCRIPTION	ASSESSMENT PRE-MITIGATION					MITIGATION	TIMEFRAMES	ASSESSMENT POST-MITIGATION				
				EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE			EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE
		Natural Vegetation	Damage and loss of natural vegetation	Site	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for biodiversity and ecological management measures.	During the LoM	Local	Long term	Improbable	Low	Low
Run on Mine and Product Stockpile	Construction of run of mine and product stockpile	Natural Vegetation	Invasive and exotic plants	Site	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for invader control measures.	During the LoM	Local	Long term	Improbable	Low	Low
			Sedimentation of surface water	Local	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for Stormwater control measures.	During LoM until rehabilitation finished	Local	Long term	Improbable	Low	Low
		Air Quality	Dust generation	Local	Long term	Probable	Low	Moderate	Refer to Annexure 3 for air quality management measures.	During LoM	Local	Long term	Improbable	Very low	Low
Run on Mine and Product Stockpile	Construction of run of mine and product stockpile	Visual Aspects	Visual intrusion	Site	Long term	Probable	Low	Low	The run of mine and product stockpile will be removed at end of mine life.	During the LoM	Site	Long term	Probable	Low	Low

SECTION	ACTIVITY	ASPECT	IMPACT DESCRIPTION	ASSESSMENT PRE-MITIGATION					MITIGATION	TIMEFRAMES	ASSESSMENT POST-MITIGATION				
				EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE			EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE
			Soil erosion	Site	Long term	Probable	Moderate	Moderate	Refer to <u>Annexure 3</u> for erosion control measures.	During the LoM	Local	Long term	Probable	Very low	Moderate
	Alien Invasive Plants removal	Soils and Surface water	Soils and surface water contamination by spills	Site	Long term	Probable	Moderate	Moderate	Refer to: <u>Annexure 3</u> for Soil Contamination management measures, <u>Annexure 3</u> for Surface Water Quality management measures, and <u>Annexure 3</u> for Invader control.	During the LoM	Site	Long term	Improbable	Low	Low

SECTION	ACTIVITY	ASPECT	IMPACT DESCRIPTION	ASSESSMENT PRE-MITIGATION					MITIGATION	TIMEFRAMES	ASSESSMENT POST-MITIGATION				
				EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE			EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE
		Surface Water	Water Contamination	Site	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for water measures	During LoM until rehabilitation finished	Site	Long term	Improbable	Low	Low
		Air Quality	Dust and Emissions	Local	Long term	Probable	Low	Moderate	Refer to Annexure 3 for air and noise measures	During LoM	Local	Long term	Improbable	Very low	Low
		Noise	Disturbance to Neighbouring Residents	Local	Long term	Probable	Low	Moderate		During LoM	Local	Long term	Improbable	Very low	Low
Infrastructure Waste, Tyres and Old Fencing Removal	Infrastructure Removal	Topography	Removal of Infrastructure	Site	Permanent	Definitely	Positive high	Positive high	See Annexure 3 for infrastructure removal measures.	During and after decommissioning	Site	Permanent	Definitely	Positive high	Positive high
		Surface Water	Sedimentation	Local	Permanent	Probable	Moderate	Moderate	Sloping of areas where infrastructure has been removed must take place as soon as possible.	During and after decommissioning	Local	Permanent	Improbable	Very low	Low

SECTION	ACTIVITY	ASPECT	IMPACT DESCRIPTION	ASSESSMENT PRE-MITIGATION					MITIGATION	TIMEFRAMES	ASSESSMENT POST-MITIGATION				
				EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE			EXTENT	DURATION	PROBABILITY	SEVERITY	SIGNIFICANCE
Soil Replacement	Replacement	Soils	Soil Compaction	Site	Permanent	Probable	High	Moderate	See Annexure 3 for soil compaction measures.	During and after decommissioning	Site	Permanent	Improbable	Low	Very low
		Surface Water	Ponding of Water	Local	Medium term	Probable	Moderate	Low	See Annexure 3 for slope angles and drainage design.	During decommissioning	Local	Medium term	Improbable	Low	Very low
	Vehicles and machinery	Air Quality	Dust and Emissions	Local	Long term	Probable	Low	Moderate	Refer to Annexure 3 for air and noise measures	During LoM	Local	Long term	Improbable	Very low	Low
	Replaced Soil	Soils	Soil Erosion	Site	Long term	Probable	Moderate	Moderate	Refer to Annexure 3 for soil erosion measures.	During LoM until rehabilitation finished	Site	Long term	Improbable	Low	Low
		Natural Vegetation	Invasive and Exotic Plants	Site	Permanent	Probable	Moderate	Moderate	See Annexure 3 for control of invasive and exotic plants.	During and after decommissioning	Site	Permanent	Improbable	Low	Very low
		Surface Water	Sedimentation	Local	Permanent	Probable	Moderate	Moderate	Revegetation of replaced soil area must take place as soon as possible	During and after decommissioning	Local	Permanent	Improbable	Very low	Low

C.7 Financial provision: (Regulation 54)

The amount that is necessary for the rehabilitation of damage caused by the operation, both sudden closure during the normal operation of the project and at final, planned closure will be estimated by the regional office of the DME, based on the information supplied in this document. This amount will reflect how much it will cost the Department to rehabilitate the area disturbed in case of liquidation or abscondence. The following calculation has been done:

SKA SA is a semi government organisation. For this reason, it is not envisaged that financial provision would be made available for any rehabilitation purposes. Discussions are underway between the SKA SA and the Department of Minerals to enter into a Memorandum of Understanding regarding this issue. Funding for rehabilitation will form part of the contract with contractors. For a cost breakdown refer to Annexure 4.

Therefore the total for environmental financial provision is:

Refer to Annexure 4

What method will be used to furnish DME with this financial provision?

Cash deposit	
Bank guarantee	
Trust Fund	
Other: (specify) (Note: other methods must be approved by the Minister)	

The standard formats for each of these types of guarantees are available from your regional office of the DME.

C.8.1 Monitoring and performance assessment.

Regulation 55 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) clearly describes the process and procedure as well as requirements for monitoring and auditing of the performance of this plan to adequately address environmental impacts from the operation. The following information must be provided:

C.8.2 Please describe how the adequacy of this programme will be assessed and how any inadequacies will be addressed. (Regulations 55(1) and 52(2)(e))

Example: I will, on a bi-monthly basis, check every aspect of my operation against the prescriptions given in Section F of this document and, if I find that certain aspects are not addressed or impacts on the environment are not mitigated properly, I will rectify the identified inadequacies immediately.

Information supplied during the operational phase which is still applicable will be forwarded to the required department. Progress reports will be forwarded to the required government departments on a regular basis (preferable every six months).

A system must be developed to ensure all projects (new and amendments) are submitted to the Northern Cape Department of Tourism, Environment and Conservation to pro-actively identify any environmental legal requirements.

of a permit is liable for any and all environmental damage or degradation emanating from his/her operation, until a closure certificate is issued in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

C.11 Public Participation: (Regulation 52(2)(g))

In terms of the above regulation consultation with interested and affected person or persons must take place prior to the approval of the environmental management plan. This regulation is quoted below for ease of reference.

"a record of the public participation undertaken and the results thereof"

- C 11.1** Any comments lodged by an interested and affected person or persons in terms of section 10(1)(b) of the Act, must be in writing and addressed to the relevant Regional Manager.
- C 11.2** Any objections lodged by an interested and affected person or persons against the application for a right or permit in terms of the Act, must set out clearly and concisely the facts upon which it is based and must be addressed to the relevant Regional Manager in writing.
- C 11.3** The Regional Manager must make known by way of publication in a local newspaper or at the office of the Regional Manager, that an application for a right or permit in terms of the Act has been received.

In the table below, please list the names of people or organisations likely to be influenced by the proposed operations (these might include neighbours, other water users, etc.) Kindly indicate how these people were consulted (eg. By letter or by phone) *and provide proof* of that consultation. What were the main concerns/objections raised by the interested and affected parties to the proposed operation?

Refer to Annexure 2 for a complete summary of the Public Participation as well as all relevant documentation.

C 11.4 Public Participation Process

D SCORING OF EIA- FOR OFFICIAL USE ONLY

Instructions for officials:

In this table, complete the totals of each section indicated below and do the calculation. ***Remember to first add all the values of sections C 1,2,4 and 5 and then to multiply it by the time factor in Section C 3***

Note that the value for the time factor element of the impact rating appears in Section C3. This is the total amount of time that the operation is expected to impact on the environment and all other factors are MULTIPLIED by this value. Compare the score (Impact rating) with the table below to help you make a decision on the total impact of the operation and also on the sufficiency of this programme to address all expected impacts from the operation on the environment.

Additional Objectives:

Based on the information provided by the applicant and the regional office's assessment thereof, combined with the interpretation of the scoring and impact rating attained for the particular operation above, the Regional Manager of the regional office of the DME may now determine additional objectives /requirements for the mine owner/manager to comply with. *These measures will be specific and will address specific issues of concern that are not adequately covered in the standard version of this document.* These requirements are not listed here, but are specified under Section G of this document, so as to form part of the legally binding part of this Environmental Management Plan.

F. ENVIRONMENTAL MANAGEMENT PLAN:

INTRODUCTION

This Environmental Management Plan contains guidelines, operating procedures and rehabilitation/pollution control requirements which will be binding on the holder of the mining permit/prospecting permission/ reconnaissance permission after approval of the Environmental Management Plan. It is essential that this portion be carefully studied, understood, implemented and adhered to at all times.

F 1 GENERAL REQUIREMENTS

F 1.1 MAPPING AND SETTING OUT

F 1.1.1 LAYOUT PLAN

- A copy of the layout plan as provided for in Regulation 2.2 must be available at the prospecting/mining site for scrutiny when required.
- The plan must be updated on a regular basis with regard to the actual progress of the establishment of surface infrastructure, mining operations and rehabilitation (a copy of the updated plan shall be forwarded to the Regional Manager on a regular basis).
- A final layout plan must be submitted at closure of the mine or when operations have ceased.

NOTE: Regulation 2.2 of the regulations promulgated in terms of the Act requires:

"An application contemplated in sub-regulation (1) must be accompanied by a plan that must contain –

- (a) the co-ordinates of the land or area applied for;*
- (b) the north point;*
- (c) the scale to which the plan has been drawn;*
- (d) the name, number and location of the land or area covered by the application; and*
- (e) in relation to farm boundaries and surveyed points-*
 - (i) the size and shape of the proposed area;*
 - (ii) the boundaries of the land or area comprising the subject of the application concerned;*
 - (iii) the layout of the proposed reconnaissance, prospecting, exploration, mining or production operations;*
 - (iv) surface structures and servitudes;*
 - (v) the topography of the land or area; "*

F 1.1.2 DEMARCATING THE MINING/ PROSPECTING AREA

- The mining/ prospecting area must be clearly demarcated by means of beacons at its corners, and along its boundaries if there is no visibility between the corner beacons.
- Permanent beacons as indicated on the layout plan or as prescribed by the Regional Manager must be firmly erected and maintained in their correct position throughout the life of the operation.
- Mining/ prospecting and resultant operations shall only take place within this demarcated area.

- All available topsoil shall be removed after consultation with the Regional Manager prior to the commencement of any operations.
- The topsoil removed, shall be stored in a bund wall on the high ground side of the mining/prospecting area outside the 1:50 flood level within the boundaries of the mining area/ prospecting.
- Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of access roads.
- The topsoil stored in the bund wall shall be adequately protected from being blown away or being eroded.

F 2.2 ACCESS TO THE SITE

F 2.2.1 Establishing access roads on the site

- The access road to the mining/prospecting area and the camp-site/site office must be established in consultation with the landowner/tenant and existing roads shall be used as far as practicable.
- Should a portion of the access road be newly constructed the following must be adhered to:
 - The route shall be selected that a minimum number of bushes or trees are felled and existing fence lines shall be followed as far as possible.
 - Water courses and steep gradients shall be avoided as far as is practicable.
 - Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary.
- If imported material is used in the construction or upgrading of the access road this must be listed in C 2.17
- The erection of gates in fence lines and the open or closed status of gates in new and existing positions shall be clarified in consultation with the landowner/tenant and maintained throughout the operational period.
- No other routes will be used by vehicles or personnel for the purpose of gaining access to the site.

NOTE: The design, construction and location of access to provincial roads must be in accordance with the requirements laid down by the Provincial or controlling authority.

F 2.2.2 Maintenance of access roads

- In the case of dual or multiple use of access roads by other users, arrangements for multiple responsibility must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the mining permit/ prospecting right.
- Newly constructed access roads shall be adequately maintained so as to minimise dust, erosion or undue surface damage.

- As a minimum requirement, the holder of a mining permit/ prospecting right shall, at least, provide pit latrines for employees and proper hygiene measures shall be established.
- Chemical toilet facilities or other approved toilet facilities such as a septic drain shall preferably be used and sited on the camp site in such a way that they do not cause water or other pollution.
- The use of existing facilities must take place in consultation with the landowner/tenant.
- In cases where facilities are linked to existing sewerage structures, all necessary regulatory requirements concerning construction and maintenance should be adhered to.
- All effluent water from the camp washing facility shall be disposed of in a properly constructed French drain, situated as far as possible, but not less than 200 metres, from any stream, river, pan, dam or borehole.
- Only domestic type wash water shall be allowed to enter this drain and any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognised facility.
- Spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.
- Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., shall be stored in a container at a collecting point and collected on a regular basis and disposed of at a recognised disposal facility. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the camp site.
- Biodegradable refuse generated from the office/camp site, processing areas vehicle yard, storage area or any other area shall either be handled as indicated above or be buried in a pit excavated for that purpose and covered with layers of soil, incorporating a final 0,5 metre thick layer of topsoil (where practicable). Provision should be made for future subsidence of the covering.

F 2.3.3 Rehabilitation of the office/camp site

- On completion of operations, all buildings, structures or objects on the camp/office site shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), which states:
 - (1) *When a prospecting right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any prospecting or mining operation comes to an end, the holder of any such right or permit may not demolish or remove any building, structure, object -*
 - (a) *which may not be demolished in terms of any other law;*
 - (b) *which has been identified in writing by the Minister for purposes of this section;*
or
 - (c) *which is to be retained in terms of an agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Minister in writing.*

F 2.4.3 Waste disposal

- Suitable covered receptacles shall be available at all times and conveniently placed for the disposal of waste.
- All used oils, grease or hydraulic fluids shall be placed therein and these receptacles will be removed from the site on a regular basis for disposal at a registered or licensed disposal facility.
- All spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.

F 2.4.4 Rehabilitation of vehicle maintenance yard and secured storages areas

- On completion of mining/prospecting operations, the above areas shall be cleared of any contaminated soil, which must be dumped as referred to in section F 2.4.3 above.
- All buildings, structures or objects on the vehicle maintenance yard and secured storage areas shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002.
- The surface shall then be ripped or ploughed to a depth of at least 300mm and the topsoil previously stored adjacent the site, shall be spread evenly to its original depth over the whole area. The area shall then be fertilised if necessary (based on a soil analysis).
- The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

F 3 OPERATING PROCEDURES IN THE MINING AREA

F 3.1 Limitations on mining/prospecting

- The mining of or prospecting for precious stones shall take place only within the approved demarcated mining or prospecting area.
- Mining/ prospecting may be limited to the areas indicated by the Regional Manager on assessment of the application.
- The holder of the mining permit/ prospecting right shall ensure that operations take place only in the demarcated areas as described in section F 1.1.2 above.
- Operations will not be conducted closer than one and a half times the height of the bank from the edge of the river channel and in such manner that the stability of the bank of the river is effected.
- Precautions shall also be taken to ensure that the bank of the river is adequately protected from scouring or erosion. Damage to the bank of the river caused by the operations, shall be rehabilitated to a condition acceptable to the Regional Manager at the expense of the holder.

deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

- In the event of damage from an occurrence where high flood waters scour and erode access points in the process of rehabilitation over the river-bank or an access point currently in use, repair of such damage shall be the sole responsibility of the holder of the mining permit or prospecting right.
- Repair to the river-bank to reinstate its original profile to the satisfaction of the Regional Manager must take place immediately after such event has occurred and the river has subsided to a point where repairs can be undertaken.
- Final acceptance of rehabilitated river access points will be awarded only after the vegetation has re-established to a point where the Regional Manager is satisfied that the river-bank is stable and that the measures installed are of durable nature and able to withstand high river-flow conditions.

F 3.2.2 Rehabilitation of mining/prospecting area in the bed of the river

- The goal of rehabilitation with respect to the area where mining/prospecting has taken place in the river-bed is to leave the area level and even, and in a natural state containing no foreign debris or other materials and to ensure the hydrological integrity of the river by not attenuating or diverting any of the natural flow.
- All scrap and other foreign materials will be removed from the bed of the river and disposed of as in the case of other refuse (see section F 2.3.2 above), whether these accrue directly from the mining/prospecting operation or are washed on to the site from upstream.
- Removal of these materials shall be done on a continuous basis and not only at the start of rehabilitation.
- Where reeds or other riverine vegetation have been removed from areas, these shall be re-established systematically in the approximate areas where they occurred before mining/prospecting.
- An effective control programme for the eradication of invader species and other exotic plants, shall be instituted on a regular basis over the entire mining/prospecting area under the control of the holder of the mining permit/ prospecting right, both during mining/prospecting and at the stage of final rehabilitation.

2. THE WATER USE LICENCE

The National Water Act, (Act 36 of 1998), is based on the principles of sustainability, efficiency and equity, meaning that the protection of water resources must be balanced with their development and use.

In addition to being issued with a prospecting right or mining permit a small-scale miner may also need to get a **water use licence** for the proposed water uses that will take place, except in certain cases.

NOTE: The Department of Water Affairs and Forestry (DWAF) developed specific Best Practice Guideline for small scale mining that relates to stormwater management, erosion and sediment control and waste management. Copies of these guidelines can be obtained from the regional office of DME or DWAF.

Applications for a water use licence must be made in good time, such that approval can be granted before a water use activity can begin. The appropriate licence forms for each kind of expected water use should be completed together with supporting documentation. The main supporting document required is a

F 3.4.1 Establishing processing areas and waste piles

- Processing areas and waste piles shall not be established within 100 metres of the edge of any river channel or other water bodies.
- Processing areas should be established, as far as practicable, near the edge of excavations to allow the waste, gravel and coarse material to be processed therein.
- The areas chosen for this purpose shall be the minimum reasonably required and involve the least disturbance to vegetation.
- Prior to development of these areas, the topsoil shall be removed and stored as described in paragraph F 2.1 above.
- The location and dimensions of the areas are to be indicated on the layout plan and once established, the processing of ore containing precious stones shall be confined to these areas and no stockpiling or processing will be permitted on areas not correctly prepared.
- Tailings from the extraction process must be so treated and/or deposited that it will in no way prevent or delay the rehabilitation process.

F 3.4.2 Rehabilitation of processing areas

- Coarse natural material used for the construction of ramps must be removed and dumped into the excavations.
- On completion of mining/prospecting operations, the surface of the processing areas especially if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 300mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.
- Prior to replacing the topsoil the material that was removed from the processing area will be replaced in the same order as it originally occurred.
- The area shall then be fertilised if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

F 3.5 TAILINGS DAM(S) (SLIMES DAM)

The permission of the Regional Manager must be obtained should a tailings dam be constructed for the purpose of handling the tailings of the mining/prospecting operations. The construction, care and maintenance of tailings dams have been regulated and the relevant regulation is copied herewith, both for your information and as a guideline to the commissioning, management, operation, closing and aftercare of a tailings deposition facility.

Regulation 73 promulgated under the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) requires the following:

Management of residue stockpiles and deposits

56. (1) *The assessment of impacts relating to the management of residue stockpiles and deposits,*

<i>of influence</i>		<i>influence</i>	<i>workings</i>	
0	< 10	0 – R2 m	> 200m	Low hazard
1 – 10	11 – 100	R 2 m – R20 m	50 m – 200 m	Medium hazard
> 10	> 100	> R20 m	< 50 m	High hazard

- (e) *A risk analysis must be carried out and documented on all high hazard residue stockpiles and deposits.*
 - (f) *The environmental classification of residue stockpiles and deposits must be undertaken on the basis of –*
 - (i) *the characteristics of the residue;*
 - (ii) *the location and dimensions of the deposit (height, surface area);*
 - (iii) *the importance and vulnerability of the environmental components that are at risk; and*
 - (iv) *the spatial extent, duration and intensity of potential impacts.*
 - (g) *An assessment of the environmental impacts shall be done on all environmental components which are significantly affected.*
 - (h) *The assessment of impacts and analyses of risks shall form part of the environmental assessment and management programme.*
- (4) *Site selection and investigation:*
- (a) *The process of investigation and selection of a site must entail –*
 - (i) *the identification of a sufficient number of possible candidate sites to ensure adequate consideration of alternative sites;*
 - (ii) *qualitative evaluation and ranking of all alternative sites;*
 - (iii) *qualitative investigation of the top ranking sites to review the ranking done in (ii);*
 - (iv) *a feasibility study to be carried out on the highest ranking site(s), involving –*
 - (aa) *a preliminary safety classification;*
 - (bb) *an environmental classification;*
 - (cc) *geotechnical investigations; and*
 - (dd) *groundwater investigations.*
 - (b) *The geotechnical investigations may include–*
 - (i) *the characterization of the soil profile over the entire area to be covered by the residue facility and associated infrastructure to define the spatial extent and depth of the different soil horizons;*
 - (ii) *the characterization of the relevant engineering properties of foundations soils and the assessment of strength and drainage characteristics.*
 - (c) *The groundwater investigations may include–*
 - (i) *the potential rate of seepage from the residue facility;*
 - (ii) *the quality of such seepage;*
 - (iii) *the geohydrological properties of the strata within the zone that could potentially be affected by the quality of seepage;*
 - (iv) *the vulnerability and existing potential use of the groundwater resource within the zone that could potentially be affected by the residue facility.*
 - (d) *From these investigations, a preferred site must be identified.*
 - (e) *Further investigation on the preferred site, shall include –*
 - (i) *land use;*
 - (ii) *topography and surface drainage;*

- (e) *A design report and operating manual shall be drawn up for all residue stockpiles and deposits which –*
 - (i) *have a medium to high hazard; and*
 - (ii) *have a potentially significant impact on the environment.*
 - (f) *Relevant information must be included in the draft environmental management programme or environmental management plan.*
- (6) *Construction and operation of residue deposits:*
- (a) *The holder of any right or permit in terms of the Act, must ensure that-*
 - (i) *the residue deposits, including any surrounding catchment paddocks, is constructed and operated in accordance with the approved environmental management programme or environmental management plan;*
 - (ii) *the design of the residue deposit is followed implicitly throughout the construction thereof, and that any deviations from the design be approved by the Regional Manager and the environmental manage programme and environmental management plan be amended accordingly;*
 - (iii) *as part of the monitoring system, measurements of all residues transported to the site and of all surplus water removed from the site are recorded;*
 - (iv) *the provision for appropriate security measures be implemented to limit unauthorised access to the site and intrusion into the residue deposit;*
 - (v) *specific action be taken in respect of any sign of pollution;*
 - (vi) *adequate measures be implemented to control dust pollution and erosion of the slopes; and*
 - (vii) *details of rehabilitation of the residue deposit be provided in the draft environmental management programme or environmental management plan.*
 - (b) *A system of routine maintenance and repair in respect of the residue deposit must be imlemented to ensure the ongoing control of pollution, the integrity of rehabilitation and health and safety maters at the site.*
- (7) *Monitoring of residue stockpiles and deposits:*
- (a) *A monitoring system for residue stockpiles and deposits with respect to potentially significant impacts as identified in the environmental assessment must be included in the environmental management programme or environmental management plan.*
 - (b) *In the design of a monitoring system for a residue stockpile or deposit, consideration must be given to –*
 - (i) *baseline and background conditions with regard to air, surface and groundwater quality ;*
 - (ii) *the air, surface and groundwater quality objectives;*
 - (iii) *residue characteristics;*
 - (iv) *the degree and nature of residue containment;*
 - (v) *the receiving environment and secifically the climatic, local geological, hydrogeological and geochemical conditions;*
 - (vi) *potential migration pathways;*
 - (vii) *potential impacts of leachate;*
 - (viii) *the location of monitoring points and the prescribed monitoring protocols; and*
 - (ix) *the reporting frequency and procedures.*
- (8) *Decommissioning, closure and after care:*
- (a) *The decommissioning, closure and post closure management of residue deposits must be addressed in the closure plan, which must contain the following -*

- (3) *The performance assessment report, shall be in the format provided in guidelines that will from time to time be published by the Department and shall as a minimum contain-*
- (a) *information regarding the period that applies to the performance assessment;*
 - (b) *the scope of the assessment;*
 - (c) *the procedure used for the assessment;*
 - (d) *the interpreted information gained from monitoring the approved environmental management programme or plan;*
 - (e) *the evaluation criteria used during the assessment;*
 - (f) *the results of the assessment; and*
 - (g) *recommendations on how and when deficiencies that are identified and/or aspects of non-compliance will be rectified.*
- (4) *The holder of a prospecting right, mining right or mining permit may appoint an independent qualified person(s) to conduct the performance assessment and compile the performance assessment report provided that no such appointment shall relieve the holder of the responsibilities in terms of these regulations.*
- (5) *Subject to section 30(2) of the Act, the performance assessment report submitted by the holder shall be made available by the Minister to any person on request.*
- (6) *If upon consideration by the Minister, the performance assessment executed by the holder is not satisfactory or the report submitted by the holder is found to be unacceptable, the holder must-*
- (a) *repeat the whole or relevant parts of the performance assessment and revise and resubmit the report; and/or*
 - (b) *submit relevant supporting information; and/or*
 - (c) *appoint an independent competent person(s) to conduct the whole or part of the performance assessment and to compile the report.*
- (7) *If a reasonable assessment indicates that the performance assessment cannot be executed satisfactorily by the holder or a competent person(s) appointed by the holder, the Minister may appoint an independent performance assessment person(s) to conduct such performance assessment. Such appointment and execution shall be for the cost of the holder.*
- (8) *When the holder of a prospecting right, mining right or mining permit intends closing such operation, a final performance assessment shall be conducted and a report submitted to the Minister to ensure that -*
- (a) *the requirements of the relevant legislation have been complied with;*
 - (b) *the closure objectives as described in the environmental management programme or plan have been met; and*
 - (c) *all residual environmental impacts resulting from the holder's operations have been identified and the risks of latent impacts which may occur have been identified, quantified and arrangements for the management thereof have been assessed.*
- (9) *The final performance assessment report shall either precede or accompany the application for a closure certificate in terms of the Act.*

F 4.2 Compliance reporting / submission of information

- Layout plans will be updated on a regular basis and updated copies will be submitted on a biennial basis to the Regional Manager
- Reports confirming compliance with various points identified in the environmental management programme will be submitted to the Regional Manager on a regular basis and as decided by the said manager .
- Any emergency or unforeseen impact will be reported as soon as possible.
- An assessment of environmental impacts that were not properly addressed or were unknown when the programme was compiled shall be carried out and added as a corrective action.

- (a) a description of the closure objectives and how these relate to the prospecting or mine operation and its environmental and social setting;
- (b) a plan contemplated in Regulation 2(2), coordinated according to generally accepted standards, showing the land or area under closure;
- (c) a summary of the regulatory requirements and conditions for closure negotiated and documented in the environmental management programme or plan;
- (d) a summary of the results of the environmental risk report and details of identified residual and latent impacts;
- (e) a summary of the results of progressive rehabilitation undertaken;
- (f) a description of the methods to decommission each prospecting or mining component and the mitigation or management strategy proposed to avoid, minimize and manage residual or latent impacts;
- (g) details of any long-term management and maintenance expected;
- (h) details of financial provision for monitoring, maintenance and post closure management, if required;
- (i) a plan or sketch at an appropriate scale describing the final land use proposal and arrangements for the site;
- (j) a record of interested and affected persons consulted; and
- (k) technical appendices, if any.

F 5.4 TRANSFER OF ENVIRONMENTAL LIABILITIES TO A COMPETENT PERSON

Should the holder of a prospecting right, mining permit or reconnaissance permission wish to transfer any environmental liabilities and responsibilities to another person or persons, the following will pertain:

- (1) An application to transfer environmental liabilities to a competent person in terms of section 48) of the Act, must be completed on Form O as set out in Annexure 1 to the Regulations and be lodged to the Minister for consideration.
- (2) The holder of a prospecting right, mining right or mining permit may transfer liabilities and responsibilities as identified in the environmental management plan and the required closure plan to a competent person as contemplated in Regulation 58.
- (3) When considering the transfer of environmental liabilities and responsibilities in terms of section 48) of the Act, the Minister must consult with any State department which administers any law relating to matters affecting the environment.
- (4) No transfer of environmental liabilities and responsibilities to a competent person may be made unless the Chief Inspector of Mines and the Department of Water Affairs and Forestry have confirmed in writing that the person to whom the liabilities and responsibilities is transferred to, have the necessary qualifications pertaining to health and safety and management of potential pollution of water resources.

J. APPROVAL

Approved in terms of Section 39(4) of the Mineral and Petroleum Resources Development Act, 2002 (Act 29 of 2002)

Signed at.....this.....day of.....2010

.....
REGIONAL MANAGER

REGION:.....

This document has been compiled by the Directorate: Mine Environmental Management of the Department of Minerals and Energy at their Head Office in Pretoria. Any comments, suggestions or inputs will be sincerely appreciated. If you have any comments or suggestions regarding this document or its application, please forward your contribution to:

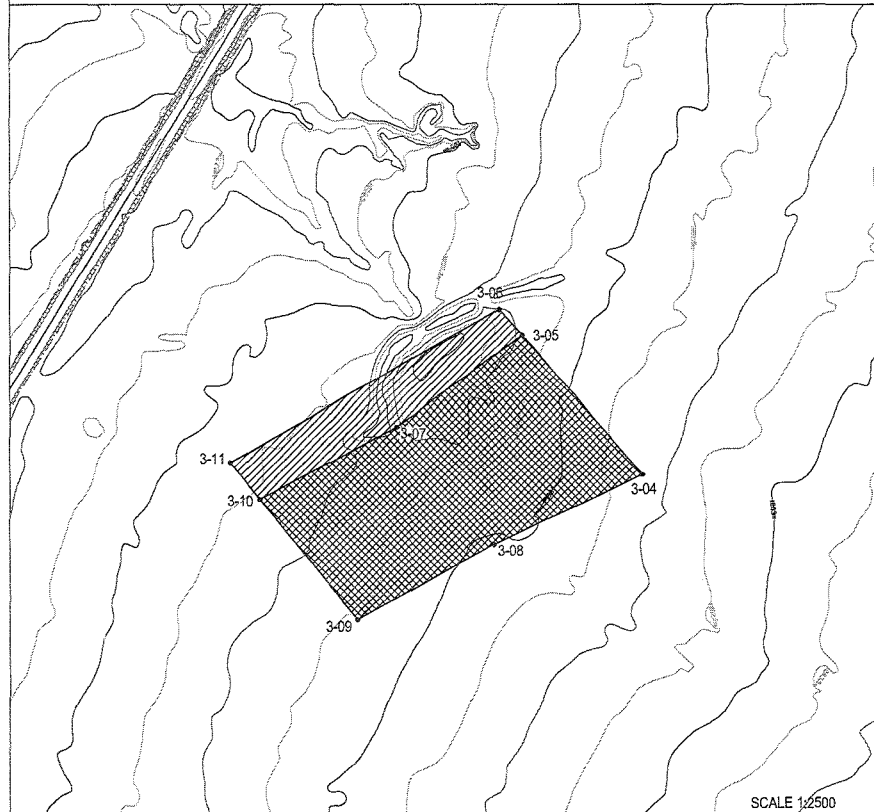
The Director: Mine Environmental Management
Private Bag X 59
PRETORIA
0001

Tel : 012 317 9288
Fax: 012 320 6786
E-mail: dorothy@mepta.pwv.gov.za



**ADDENDUM 1
LAYOUT OF THE PERMIT AREA**

BORROWPIT 3 B CO-ORDINATES		
NO	POSITION Y	POSITION X
3-04	46776.2776	-3397023.1153
3-05	46717.4694	-3396956.6381
3-06	46706.4705	-3396944.2048
3-07	46656.1702	-3397000.3423
3-08	45703.8601	-3397056.8038
3-09	49637.1610	-3397053.1230
3-10	46589.4800	-3397034.5586
3-11	46575.2488	-3397017.1181
MATERIAL 82500 m ³		
TOTAL AREA 1.499 ha		

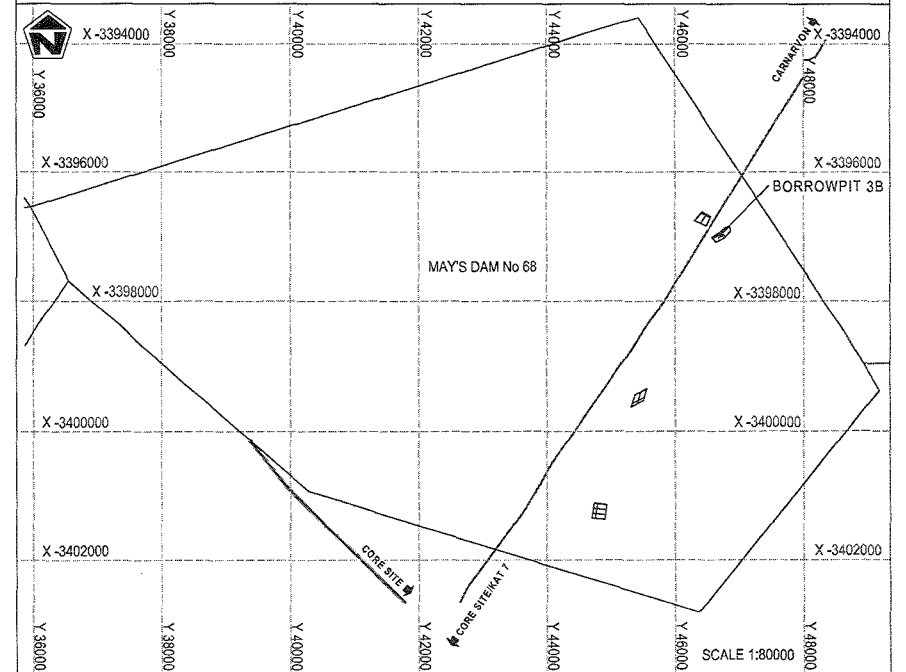


PREPARED BY: AURECON
 CHECKED BY: P GRAHAM
 DATE: MARCH 2011

SKA WORK PACKAGE 1
 PROVISION OF DESIGN & ENGINEERING SERVICE FOR MEERKAT
 SKA SA SSLE 0012009

THE HATCHED FIGURE: AREA TO BE EXPROPRIATED

PROPERTY DESCRIPTION MAY'S DAM No 68	DISTRICT CARNARVON DISTRICT
OWNER(S) SKA SA MEY'S DAM No 68 KAREEBERG MUNICIPALITY CARNARVON DISTRICT NORTHERN CAPE	DIAGRAM NO.
CONTACT PERSON: TRACY CHEETHAM TEL No: 011 442 2434 FAX No: 011 442 2434	TITLE DEED NO. T047450/08
APPROVED	APPROXIMATE AREA TO BE ACQUIRED: TOTAL
REGIONAL MANAGER	DATE
	0.330 Ha
	1.169 Ha



EXTENT OF PROPERTY: 7046.0463 Ha
 SCALE: AS SHOWN

LEGEND					
EXISTING ROAD RESERVE	FUTURE ROAD RESERVE	ACCESS ROAD	STOCKPILING OF OVERBURDEN	BORROW PIT	QUARRY



**ADDENDUM 2
PUBLIC PARTICIPATION**

Public Participation

A Public Participation Process (hereafter PPP) was conducted as part of the Environmental Impact Assessment (hereafter EIA) process; as set out in the Minerals and Petroleum Resources Development Act, Act 28 of 2002 (hereafter MPRDA) section 10 (b) “*to call upon Interested and Affected Parties (hereafter I&AP’s) to submit their comments regarding the application within 30 days of the notice*”. The purpose entails the gathering of information from the community and stakeholders that could ultimately affect the decision-making process concerning the planning, construction and operational phases of the proposed mine. The communities and public have been identified as I&AP’s and they have been given the opportunity to participate in this process.

The PPP aims to enlighten the public on the positive and negative aspects that the proposed mine will have on their immediate surroundings. Negative comments and objections received from I&AP’s prompt the applicant to enact change in their proposed course of action. The applicant is compelled to mitigate to an acceptable status the significant impacts, as well as consider suitable alternatives as identified during the process.

1 Objectives of the PPP

The PPP has the following objectives:

- To inform I&AP’s as well as all Stakeholders of the proposed mining activities;
- To provide an opportunity for I&AP’s and Stakeholders to raise environmental issues / concerns and make suggestions;
- To promote transparency and an understanding of the project and its consequences;
- To serve as a structure for liaison and communication with I&AP’s and Stakeholders;
- To serve as a data gathering mechanism (of local knowledge) for the Impact Assessment.

To summarise, the objective of the on-going PPP is to promote openness and transparency concerning the proposed gravel quarries. Any conclusions agreed upon must be socially, financially and technically acceptable and feasible in order to meet the requirements of the MPRDA, Act No. 28 of 2002.

advertisement was placed to inform the public of the mining activities. This advertisement was published in English and Afrikaans. The advertisement provided information on:

- Legislation used for the PPP;
- Applicant details;
- Details of the proposed activity;
- Location of the proposed activity;
- Contact details of the environmental consultant; and
- Details on how to participate in the PPP.

Ten (10) Site Notices of A4 size were erected in the town of Carnarvon. Eight (8) Site Notices of A3 size, one at each quarry site, were erected. Two (2) A3 Site Notices were erected on the roads closest to the quarries. This was done during the 8th and 9th February 2011. These notices contained the same information as the advertisements.

Background Information Documents (BID) were also distributed in the town of Carnarvon. This was done during the 8th and 9th February 2011. These BID's contained the same information as the advertisements with an additional locality map included. Refer to **Addendum 1 and 2** for proof and copies of these site notices and advertisement.

4 Public Meeting

An SMS containing an invitation to the public meeting was send to all members of the SKA Stakeholders Forum. The names of the forum are contained in **Table 1**. During the time in the town of Carnarvon the public meeting was also mentioned to all people met in the town.

The public meeting was held on 10th February 2011 in the Kareeberg Library. Refer to **Addendum 3** for the Minutes of the Meeting, **Addendum 4** for the Presentation, and **Addendum 5** for the Attendance Register for the Meeting.

Table 1: List of Interested and Affected Parties

NAME	ORGANIZATION
Ria van Schalkwyk	ACVV
Q Liebenberg	AME Kerk
Koos Saal	AME Kerk
Keith Hoorn: Deputy Chairperson	ANCYL
GregoriusSlaverse: Deputy Secretary	ANCYL
Jerrian Kock	ANCYL

Table 2: Comments Raised during Meeting

COMMENT	REPLY
Will the stone be transported through Carnarvon if the Saaifontein Stone Quarry is used?	At the current stage of the project a decision has not been made on which quarry will be utilized and therefore the decision around the transportation routes has not yet been made
Construction of the road to SKA? Will it be necessary to construct the road again?	The access road to the SKA SA site is and will continue to be maintained on a frequent basis by the Northern Cape Department of Roads. There is no need to construction the road again. The project is currently working very closely with the Northern Cape Department of Roads who are responsible for the maintenance of the provincial road to the SKA SA site.
Mrs Hanekom requested a geological map to view the granite of the area. She wanted to know if there is no stone nearer to the SKA activities.	The entire area has been surveyed by geotechnical specialists for material to be used. These two stone quarries are the nearest quarries with the most suitable material and quantity of material.
Was there flood irrigation in the areas? Are the areas inhabited?	Dams were used for flood irrigation. No other inhabited areas are lower down the area. Nobody will be impacted upon.
Is there a social impact study done and was it done with the people of the area?	The SKA SA is busy with the development of a "Social and Labour Road Map". The SKA SA has conducted a socio-economic baseline study of the local area in 2007 which was followed by a socio-economic impact study in 2009. The findings of both reports were made available to the Northern Cape Province, the local municipalities and the Stakeholder Forums.
What will be the influence of the use of the road past Konka Farm and the Corbelled dwellings when considering routes to be used for trucks?	Mitigation measures will be put into place for this. Refer to <u>Annexure 3</u> for Air Quality management measures.
Will there be rehabilitation plans for the quarries?	This will be in place. Refer to <u>Annexure 3</u> for Rehabilitation management measures.
Rehabilitation funding	SKA is a semi government organisation. For this reason, a financial provision will not be in place. Discussions are underway between the SKA SA and the Department of Minerals to enter into a Memorandum of Understanding regarding this issue. Funding for rehabilitation will form part of the contract with contractors.
Will there be follow-up action to discuss the comments to be raised throughout the project?	Yes, a follow-up meeting will take place.
Will there be adequate water for the stone crushing activities?	Yes, this has been investigated by Aurecon.
Dust and noise from Saaifontein.	Mitigation measures will be put into place for this. Refer to <u>Annexure 3</u> for Air Quality management measures.
Water problems on Saaifontein.	Mitigation measures will be put into place for this.





ADDENDUM 2A
Public Meeting Presentation

**MeerKAT: Publieke Vergadering vir Bespreking van
Gruisgroef- en Klipgroef Aktiwiteite**

Donderdag, 10 Februarie 2011

Aanbieder: Salomo Vorster (Shangoni)

Opening en Verwelkoming

- Almal (alle Geïnteresseerde en Geëffekteerde Partye) word hartelik welkom geheet by die publieke vergadering rakende die mynboureg aansoek van gruisgroewe en klipgroewe vir die MeerKAT projek.
- Dankie vir die gasvryheid in die dorp en die belangstelling getoon in die projek.
- Die publieke deelname proses is deel van wetlike vereiste, waarvan hierdie vergadering addisioneel is tot die proses is.
- Let wel, hierdie projek is slegs vir die aansoek van die mynbou-lisensie vir die groewe en nie vir die implementering van die uitgraving van die groewe nie.



Vergadering Protokol

- Registreer as 'n Geïnteresseerde en Geëffekteerde Party deur jou kontakbesonderhede in die register in te skryf.
- Indien jy enige vrae het kan jy dit enige tyd tydens die aanbieding vra.
- Sê asb wat jou naam is en wie jy verteenwoordig asook wat jou vraag is sodat dit vir rekord doeleindes aangeteken kan word.
- Die notule sal beskikbaar gestel word aan al die mense wat geregistreer het as Geïnteresseerde en Geëffekteerde Partye.
- Shangoni sal vandag se vergadering fasiliteer.
- Indien ons nie 'n duidelike antwoord het nie sal ons terugkom na jou toe.



Agenda van die Vergadering

1. Doel van die vergadering
2. Inleiding
3. Projek beskrywing
4. Proses gevolg
5. Bespreking
6. Vergadering verdaag



Doel van die Vergadering

- Om all partye in te lig oor die plasing van die voorgestelde groewe.
- Om insette van die publiek an ander partye te kry rakende die verwagte impakte
- Om all partye in te lig oor die verwagte aktiwiteite rondom die groewe
- Om die publiek in te lig oor die spesialis studies en die proses wat gevolg word vir die goedkeuring van die groewe



Inleiding

- Behoeftes vir konstrusie materiaal vir MeerKAT projek (algemene fondasies en paaie).
- Behoeftes van $\pm 430\,000\text{m}^3$ gruis.
- Behoeftes van $\pm 16\,500\text{m}^3$ klip.
- Vir ekonomiese doeleindes moet groewe so naby as moontlik aan die gebruik areas wees.
- 4 areas geïdentifiseer vir gruisgroewe.
- 2 areas geïdentifiseer vir klipgroewe.

