



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

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From: Directorate: Mineral Regulation: Northern Cape **Date:** 16 November 2010

Enquiries: Ms. M.S Makoele Email: maphakiso.makoele @dmr.gov.za

Ref: NC 30/5/1/1/2/3/2/1/2346 EM

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

Attention: Mary Leslie

CONSULTATION IN TERMS OF SECTION 40 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 2002, (ACT 28 OF 2002) FOR THE APPROVAL OF AN ENVIRONMENTAL MANAGEMENT PLAN FOR PROSPECTING RIGHT IN RESPECT OF DIAMONDS ON THE REMAINING EXTENT OF THEFRASEDALE 184, PORTION 1 (PORTSMOUTH) OF FARM 185, REMAINING EXTENT OF FARM 185 AND FARM 203 SITUATED IN MAGISTERIAL DISTRICT OF BARKLY WEST NORTHERN CAPE.

APPLICANT: DE BEERS CONSOLIDATED MINES LIMITED

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 **15 January 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 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

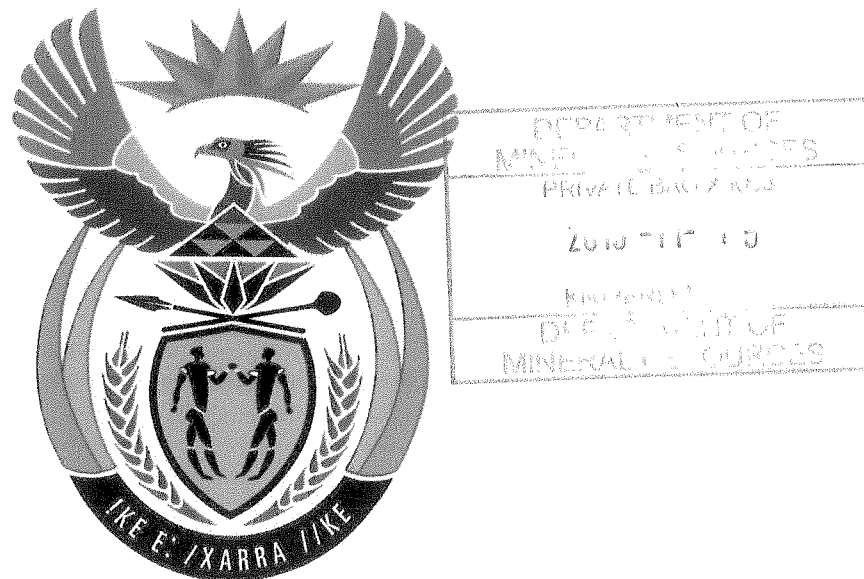
REGIONAL MANAGER: MINERAL REGULATION
NORTHERN CAPE REGION

File number: NC 30/5/1/1/2/2346 PR

DEPARTMENT MINERAL RESOURCES

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	

Applicant: DE BEERS CONSOLIDATED MINES LIMITED

Farms: THE REMAINING EXTENT OF THE FARM FRASERDALE 184, THE
REMAINING EXTENT AND PORTION 1 (PORTSMOUTH) OF FARM 185, AND
FARM 203

District: BARKLY WEST DISTRICT, NORTHERN CAPE PROVINCE

Mineral: DIAMONDS

Date: 11 November 2010

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

A.3 PURPOSE

This document aims to:

- Provide a national standard for the submission of Environmental Management Plans for the types of applications mentioned above.
- Ensure compliance with Regulation 52 of the MPRDA.
- Assist applicants by providing the information that the Department: Mineral Resources (DMR) requires in a simple language and in a structured, prescribed format, as contemplated in Regulation 52 (2) of the (MPRDA).
- Assist regional offices of the DMR to obtain enough information about a proposed prospecting/ reconnaissance or mining permit operation to assess the possible environmental impacts from that operation and to determine corrective action even before such right is granted and the operation commences.

This document aims both to provide the DMR regional offices with enough information about applicants for mining permits and applicants with guidance on environmental management matters pertaining to the mitigation of environmental impacts arising from their operations. Given this dual focus and the generic nature of the document, it might not be sufficient for all types of operations under various circumstances.

The document may therefore be altered or added to as the particular circumstances of the application in question may require.

Section of Act	Legislated Activity/ Instruction/ Responsibility or failure to comply	Penalty in terms of Section 99
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
95	Holder of a permit/right may not subject employees to occupational detriment on account of employee disclosing evidence or information to authorised person (official)	Penalty as may be imposed for perjury
All sections	Inaccurate, incorrect or misleading information	A fine or imprisonment of up to six months or both
All sections	Failure to comply with any directive, notice, suspension, order, instruction, or condition issued	A fine or imprisonment of up to six months or both

A.6 OTHER RELEVANT LEGISLATION

Compliance with the provisions of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and its Regulations does not necessarily guarantee that the applicant is in compliance with other Regulations and legislation. Other legislation that may be immediately applicable includes, but is not limited to:

- National Monuments Act, 1969 (Act 28 of 1969).
- National Parks Act, 1976 (Act 57 of 1976)
- Environmental Conservation Act, 1989 (Act 73 of 1989)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965)

B. BIOGRAPHIC DETAILS OF THE APPLICANT:

B 1.1 Full name (and surname) of person or company applying for permit or right	<i>De Beers Consolidated Mines Limited</i>
B 1.2 ID number of person or company/ CC registration number	<i>1888/000007/06</i>
B 1.3 Postal address	<i>P O Box 616 Kimberley 8300</i>
B 1.4 Physical/ residential address	<i>36 Stockdale Street Kimberley 8301</i>
B 1.5 Applicant's telephone number	<i>053 839 4248</i>
B 1.6 Applicant's cellular phone number	<i>n/a</i>
B 1.7 Alternative contact's name	<i>A W Dreyer</i>
B 1.8 Alternative contact's telephone/cell phone numbers	<i>053 839 4243</i>
B 2.1 Full name of the property on which mining/ prospecting operations will be conducted	<i>The farms Fraserdale 184, Farm 185 and Farm 203</i>
B 2.2 Name of the subdivisions	<i>Fraserdale 184 - remaining extent; Farm 185 – remaining extent and portion 1 (Portsmouth); Farm 203 – the farm.</i>
B 2.3 Approximate centre of mining/prospecting area:	
Longitude	<i>23 ° 48 min 20 sec East</i>
Latitude	<i>28 ° 04 min 45 sec South</i>
B 2.4 Magisterial district	<i>Barkly West</i>
B 2.5 Name of the registered owner of the property	<i>See attached list marked Annexure A</i>
B 2.6 His/her Telephone number	<i>See attached list marked Annexure A</i>

C. ENVIRONMENTAL IMPACT ASSESSMENT:

The information provided in this section will enable officials to determine how serious the impact of the prospecting/mining operation will be.

Please also refer to the attached Aspects and Impacts register compiled for this project, presented as Appendix 2.

DESCRIBE THE ENVIRONMENT THAT WILL BE AFFECTED BY THE PROPOSED PROSPECTING/MINING OPERATIONS UNDER THE FOLLOWING HEADINGS:

C.1 DESCRIPTION OF THE ENVIRONMENT LIKELY TO BE AFFECTED BY PROPOSED PROSPECTING/MINING OPERATIONS: (REGULATION 52(2)(a))			
ENVIRONMENTAL ELEMENT/ IMPACTOR	VALUE	TICK	OFFICE USE
C 1.1 What does the landscape surrounding the proposed operation look like? (Open veldt/ valley/ flowing landscape/ steep slopes)			
The application area comprises flat, rocky terrain on the Ghaap Plateau, with a very gentle regional slope to the south-east. It is covered by open shrub savanna with scattered pans. The mean elevation of the area applied for is approximately 1470 m.a.s.l. with the highest point in the west being 1497 m.a.s.l and the lowest point on the eastern boundary being 1441 m.a.s.l. Refer to 1:50,000 topographic map sheets 2823BA and BB.			
C 1.2 Describe the type of soil found on the surface of the site			
The soil is mostly shallow, red-yellow apedal and freely drained (code Ae9) with Mispah forms as well (code Fc4). Lime is generally present due to the underlying dolomites and surficial limestone.	VALUE	TICK	OFFICE USE
C 1.3 How deep is the topsoil?	0 – 300mm	√	8
Proper soil is thin, described as less than 450 mm..	300 – 600mm		4
	600mm +		2

C 1.5 What animals naturally occur in the area?

Naturally, the area would support a large variety of grazers and browsers found in the region, but due to the farming activities in the area, now supports a lesser variety of reptiles (snakes & lizards), birds and mammals with an affinity for such terrain (e.g. baboons, steenbuck, kudu, jackal, caracal). The caracal and steenbuck are both on the IUCN Red Data list but are rated of "Least Concern".

The following Red Data Birds are listed for the relevant quarter degree sheets (2823 BA and BB) as a whole and it is not known whether these species would be expected on these particular farms.

Vulnerable: Tawny Eagle, Martial Eagle, African Marsh Harrier, Lesser Kestrel and Kori Bustard,

The planned prospecting is unlikely to have a significant impact on these animals, due to its limited footprint and the fact that much of the area is used for farming purposes.

Reference: Barnes, K.N. (ed.) 2000. The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland. Birdlife South Africa, Johannesburg.

	VALUE	TICK	OFFICE USE
C 1.6 Are there any protected areas (game parks/nature reserves, monuments, etc) close to the proposed operation?	Yes		4
	No	√	0

C 1.7 What mineral are you going to prospect or mine for?

Diamonds

C 1.8 Describe the type of equipment that will be used:

4x4 LDVs to access the area, various portable (man carried) geophysical surveying instruments, possibly truck mounted drill rigs and ancillary equipment, possibly light earthmoving equipment, possibly skid mounted core drill rigs and ancillary equipment; see Appendix 1.

C.2 HOW WILL THE PROPOSED OPERATION IMPACT ON THE NATURAL ENVIRONMENT? (REGULATION 52(2)(b))

Please read this section in conjunction with Appendix 1 which contains a description of diamond exploration techniques to be used together with an assessment of their impact on the natural environment.

ENVIRONMENTAL ELEMENT/ IMPACTOR	VALUE	TICK	OFFICE USE
C 2.1 What will the ultimate depth of the proposed prospecting/mining operations be?	0 – 5m		2
Pitting/trenching if required, is unlikely to exceed 10m whilst drilling could exceed	6 – 10m	√	4
	10 – 25m		8

<i>Water will only be required for mineral processing if the work programme advances to the phase where large diameter drill sampling is undertaken. In this event, water will be required for the initial de-sliming of drill chip samples as the remainder of the sample treatment will take place away from the drill site (see Appendix 1). The amount of water required is unknown and is dependent on whether the drill holes intersect water. However, it is estimated that c 5000l of water will be required per large diameter drill hole to initiate the water recycling process. Each large diameter drill hole will take several days to complete. The water will be obtained from existing boreholes with the landowner's/occupier's permission or from a municipal source with the landowner's/occupier's permission, along with approval from the Department: Water Affairs</i>	20 000 – 40 000 L		3
	40 000 – 60 000 L		5
	60 000 – 100 000L		8
	More		10
C 2.10 How far is the proposed operation from open water (dam, river, pan, lake)?	0 – 15m		8
<i>There is no permanent open water in the area, only seasonal pans and non-perennial stream courses. Although geophysical surveying may cover some of the pans and streams, this will cause no disturbance. There should be no need to drill or create excavations within 60 metres of any of these. (Ref. 1:50,000 scale topographic sheets 2823 BA and BB).</i>	16 – 30m		6
	31 – 60m		4
	More than 60 metres	√	2
C 2.11 What is the estimated depth of the water table/ borehole?	<i>The depth of the water table has been reported by the surface owners. The depth of water encountered will be included in the progress report if drilling is conducted. The estimated borehole depth is no more than 150 metres.</i>		30 to 80 metres
C 2.12 How much water per day will the proposed operation utilize for employees? <i>Water for drinking purposes will be brought onto site and would be a maximum of 50 litres per day.</i>	c 50		Litres
C 2.13 What toilet facilities will be made available to workers?	None		8
<i>Due to the very short time taken for geophysical surveying, no toilet facilities need be provided, however should the project progress to pitting/ trenching and/or drilling,</i>	Pit latrine (longdrop)		4
	Chemical toilet	√	2

<i>The prospecting operation is conducted in phases as indicated in Appendix 1. In this case, the initial phase, geophysical surveying, will take no longer than a few days. If the project matures to drilling, pitting and/or trenching, these may take up to 3 months. The entire physical prospecting activities within the work programme, possibly extending over an 8 year period, are unlikely to exceed 18 months.</i>	6 – 12 months		4
	12 – 18 months	√	6
	18 – 24 months		8
	>24 months		10

avoided to ensure the integrity of data. <i>It is not possible to predetermine whether the work programme will advance to phases requiring pitting/trenching and/or drilling and, thus, it is not possible to predetermine the site for these activities relative to the above mentioned structures (see Appendix 1). However, pitting/trenching and/or drilling would be undertaken as far away from the above mentioned structures as possible. Given the rural nature of the area it is likely that most activities will be at least 50m from structures. The actual distances from the above mentioned structures will be included in the progress report</i>			
	150 or more metres		2
C.5 HOW WILL THE PROPOSED OPERATION IMPACT ON THE CULTURAL HERITAGE OF THE SURROUNDING ENVIRONMENT? REGULATION 52(2)(b)			
ELEMENT/ IMPACTOR	VALUE	TICK	OFFICE USE
C 5.1 Are there any graveyards or old houses or sites of historic significance within 1 kilometre of the area?	Yes	√	8
<i>There are farmhouses present, although their ages are unknown, and graves may be present near these (none are marked on the topographic map) and one graveyard has been reported by a surface owner on portion 1 (Portsmouth) of Farm 185. However, the greatest extent of the area is used for farming. Initial geophysical surveying may be within 50m of a farmhouse and/or grave but these activities have no impact. It is not possible to predetermine whether the work programme will advance to phases requiring pitting/trenching and/or drilling and, thus, it is not possible to predetermine the site for these activities relative to the above mentioned occurrences (see Appendix 1). However, pitting/trenching and/or drilling would be undertaken as far away from the above mentioned occurrences as possible. The actual distances from the above mentioned structures, if found to be present, will be included in the progress report. It is suggested that an Archaeological Impact Assessment be performed for specific sites, if and when the project progresses to large diameter drilling, pitting or trenching.</i>	No		0

PVC sheeting will be placed under any machinery on site that has the potential to develop an oil leak. Should there be an oil leak onto the PVC sheeting this will be cleaned up and the cleaning material sent for bioremediation or proper disposal. Drip trays will be used to collect oils and fluids from any emergency on-site servicing and repair of machinery and vehicles. Only emergency servicing will be permitted on site. All old oil will be removed for recycling or proper disposal. Should there be a spill of hydrocarbons onto the soil, the contaminated soil will be removed and sent for bioremediation or proper disposal.

6.6.3 Briefly describe the storage facilities available for the above fluids:

Storage will be short-term (for the duration of the activity for which they are required only). All oil containers kept on site, if any, will be kept in drip trays and stored in a demarcated area with minimal pedestrian activity allowed to minimize the chance of the containers being knocked over. They will also be kept under cover to prevent contamination by rain water.

C.7 Financial provision: (Regulation 54)

The amount that is necessary for the rehabilitation of damage caused by the operation, both after sudden closure during the normal operation of the project and at final, planned closure will be estimated by the regional office of the DMR, 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.

Enter the amount of financial provision required here: R37 450

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

Cash deposit	
Guarantee (Standard Bank, Kimberley) for an amount of R37,450.00. See Annexure "B"	√
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 DMR.

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.

As part of the internal Environmental Management System (EMS) all employees and contractors receive environmental induction, environmental awareness is reinforced through regular toolbox talks. The EMS includes monitoring and reporting requirements, the purpose being to monitor the impact on the environment. The Geologist responsible for the project will check all aspects of the operation against both the requirements of the EMS and the prescriptions in Section F of this document. A non conformance reporting system is in place as part of the EMS, any non conformances will be reported and the appropriate corrective and preventive actions taken.

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 (e.g. 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?

Name of Interested/affected party	Contact details	How did consultation take place?*	What were his/her main concern about the operation?
Christiaan Francois Daffue Mercia Theresa Daffue R/E of FRASERDALE 184	PO Box 136 DANIELSKUIL 8405 083 515 8821	On 17 September 2010 a letter was sent via registered mail to Christiaan Francois Daffue PO Box 136, DANIELSKUIL 8405, regarding the acceptance of our application for a prospecting right over the abovementioned farm. He confirmed his contact details telephonically. Representatives of De Beers met with them on Fraserdale 184 on Wednesday morning 13 October 2010. Mr Macdonald showed them the presentation (attached). Mr and Mrs Daffue requested De Beers' Environmental Management Plan and Work programme.	Their access road is through Mr J Aucamps' property. Their main concerns are accommodation of workers and impacts on water, air and noise quality. They request afrikaans correspondence in future. They appreciated the visit and agreed that all their current questions were addressed.
Vlok Familietrust IT288/2000 Jacobus Adriaan Louw Vlok Marilyn Vlok Portion 1 (PORTSMOUTH) of FARM 185	Rian Vlok PO Box 1400 Oos Londen 084 581 3290	On 17 September 2010 a letter was sent via registered mail to The Trustees, Vlok Familietrust, PO Box 1400, East London, regarding the acceptance of our application for a prospecting right over the abovementioned farm. Mr Rian Vlok confirmed his contact details telephonically. Mr Matthys Fourie, from Fourie Vennootskap Trust, is renting his farm.	Mr Vlok replied in writing on 12 October 2010 in which we were advised that he does not have any comments on our intended prospecting activities on the abovementioned farm.
Fourie Vennootskap Trust IT39/2002 Matthys J Fourie thys@fourievennootskap.co.za Jans Fourie info@fourievennootskap.co.za R/E of FARM 185 FARM 203	PO Box 100990 BRANDHOF 9324 051 4104 160 Mr Jans Fourie 086 505 0145 083 321 2896	On 17 September 2010 a letter was sent via registered mail to The Trustees, Fourie Vennootskap Trust, PO Box 100990, BRANDHOF, 9324, regarding the acceptance of our application for a prospecting right over the abovementioned farm. A lady confirmed the contact details telephonically. Mr Matthys Fourie requested a letter by e-mail ('thys@fourievennootskap.co.za') which was sent on 11 October 2010. Mr Fourie attended the Farmers Union meeting on 12 October 2010.	Mr Jans Fourie replied on 26 October 2010 and requested an agreement before prospecting activities may start.
Farmers' Union		After the meeting with the Farmers' Union, Mr Kobus Gous, the chairman, requested on behalf of Fourie Vennootskap and other farmers an access agreement with compensation. De Beers will reply in the near future.	

* With regard to the consultative process, please refer to our letter dated 15 October 2010 addressed to the Regional Manager, Dept: Mineral Resources, Kimberley. Copies of the letters referred to above were included with this letter. A further copy of our letter dated 15 October 2010 is attached to this EMPlan (master copy only). Copies of replies received after 11 October 2010 are also attached.

E UNDERTAKING:

I, **IAN NORMAN SCHEEPERS**, on behalf of the applicant for a prospecting right hereby declare that the above information is true, complete and correct. We undertake to implement the measures as described in Section F hereof. We understand that this undertaking is legally binding and that failure to give effect hereto will render us liable for prosecution in terms of Section 98 (b) and 99 (1)(g) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). We are also aware that the Regional Manager may, at any time but after consultation with me, make such changes to this plan as he/she may deem necessary. Further, we undertake to consider any specific additional requirements that may be set for the operation by the Regional Manager and, if those additional requirements are agreeable to us, to sign the undertaking comprising Section H of this Environmental Management Plan.

Signed on this 11th day of November 2010 at Kimberley



Signature of applicant

Assistant Secretary
Designation

- Mining/ prospecting and resultant operations shall only take place within this demarcated area.

F 1.1.3 DEMARCATING THE RIVER CHANNEL AND RIVERINE ENVIRONMENT

The following is applicable if operations are conducted within the riverine environment (See F 3.2):

- Beacons as indicated on the layout plan or as prescribed by the Regional Manager must be erected and maintained in their correct position throughout the life of the operation.
- These beacons must be of a permanent nature during the operations and must not be easily removable, especially those in a river channel. The beacons must, however, be removed at the end of the operations.
- The mining of and prospecting for any mineral shall only take place within this demarcated mining area.
- If riverine vegetation is present in the form of reeds or wetland vegetation, the presence of these areas must be entered in Part C 1.45 of the EMPlan and indicated on the layout plan.
- The holder of the mining permit/ prospecting right will also be required to permanently demarcate the areas as specified in F 1.1.2.

F 1.2 RESTRICTIONS ON MINING/ PROSPECTING

- On assessment of the application, the Regional Manager may prohibit the conducting of mining or prospecting operations in vegetated areas or over portions of these areas
- In the case of areas that are excluded from mining or prospecting, no operations shall be conducted within 5 m of these areas.

F 1.3 RESPONSIBILITY

- The environment affected by the mining/ prospecting operations shall be rehabilitated by the holder, as far as is practicable, to its natural state or to a predetermined and agreed to standard or land use which conforms with the concept of sustainable development. The affected environment shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof.
- It is the responsibility of the holder of the mining permit/ prospecting right to ensure that the manager on the site and the employees are capable of complying with all the statutory requirements which must be met in order to mine, which includes the implementation of this EMP.
- If operations are to be conducted in an area that has already been disturbed, the holder must reach specific agreement with the Regional Manager concerning the responsibilities imposed upon himself/herself pertaining to the rehabilitation of the area and the pollution control measures to be implemented.

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.

F 2.2.3 Dust control on the access and haul roads

- The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.

F 2.2.4 Rehabilitation of access roads

- Whenever a mining permit/ prospecting right is suspended, cancelled or abandoned or if it lapses and the holder does not wish to renew the permit or right, any access road or portions thereof, constructed by the holder and which will no longer be required by the landowner/tenant, shall be removed and/or rehabilitated to the satisfaction of the Regional Manager.
- Any gate or fence erected by the holder which is not required by the landowner/tenant, shall be removed and the situation restored to the pre mining/ prospecting situation.
- Roads shall be ripped or ploughed, and if necessary, appropriately fertilised (based on a soil analysis) to ensure the regrowth of vegetation. Imported road construction materials which may hamper regrowth of vegetation must be removed and disposed of in an approved manner prior to rehabilitation.
- 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 the Regional Manager's specification.

F 2.3 OFFICE/CAMP SITES

F 2.3.1 Establishing office / camp sites

- Office and camp sites shall be established, as far as is practicable, outside the flood plain, above the 1 in 50 flood level mark within the boundaries of the mining/ prospecting area.
- The area chosen for these purposes shall be the minimum reasonably required and which will involve the least disturbance to vegetation. Topsoil shall be handled as described in F 2.1 above

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.*
 - (2) *The provision of subsection (1) does not apply to bona fide mining equipment which may be removed*
- Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
- Areas containing French drains shall be compacted and covered with a final layer of topsoil to a height of 10cm above the surrounding ground surface.
- 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 vegetation seed mix to his or her specification.
- Photographs of the camp and office sites, before and during the mining/prospecting operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the Regional Manager.

F 2.4 VEHICLE MAINTENANCE YARD AND SECURED STORAGE AREAS

F 2.4.1 Establishing the vehicle maintenance yard and secured storage areas

- The vehicle maintenance yard and secured storage area will be established as far as is practicable, outside the flood plain, above the 1 in 50 flood level mark within the boundaries of the mining/prospecting area.
- The area chosen for these purposes shall be the minimum reasonably required and involve the least disturbance to tree and plant life. Topsoil shall be handled as described in F 2.1 above.

- 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.
- Restrictions on the disturbance of riverine vegetation in the form of reeds or wetland vegetation must be adhered to. The presence of these areas must be entered in Part of the programme and indicated on the layout plan.

F 3.2 Mining/ prospecting operations within the riverine environment

NOTE: The Department of Water Affairs and Forestry may impose additional conditions which must be attached to this EMP. In this regard, please see the Best Practice Guideline for small scale mining developed by DWAF (BPG 2.1)
(available from <http://www.dwaf.gov.za>)

- The mining of or prospecting for precious stones in the river or the banks of the river will be undertaken only after the Regional Manager has consulted with the Department of Water Affairs and Forestry.
- The canalisation of a river will not be undertaken unless the necessary permission has been obtained from the Department of Water Affairs and Forestry. Over and above the conditions imposed by the said Department, which conditions shall form part of this EMP, the following will also apply:
 - ❖ The canalisation of the flow of the river over different parts of the river bed shall be constructed in such a manner that the following are adhered to at all times:

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 DMR 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 technical report. To make the technical report easier, you can refer to sections in this EMPlan, as most of what the technical report requires has already been done in the EMPlan. If you refer to the EMPlan it must be attached to the technical report.

F 3.3 EXCAVATIONS

F 3.3.1 Establishing the excavation areas

- Whenever any excavation is undertaken for the purpose of locating and/or extracting ore bodies of all types of minerals, including precious stone-bearing gravels, the following operating procedures shall be adhered to:
 - ❖ Topsoil shall, in all cases (except when excavations are made in the river-bed), be handled as described in F 2.1 above.
 - ❖ Excavations shall take place only within the approved demarcated mining/prospecting area.
 - ❖ Overburden rocks and coarse material shall be placed concurrently in the excavations or stored adjacent to the

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, where appropriate, must form part of the environmental impact assessment report and environmental management programme or the environmental management plan.*
- (2) *Residue characterisation*
- (a) *Mine residue must be characterised to identify any potentially significant health and safety hazard and environmental impact that may be associated with the residue when stockpiled or deposited at the site(s) under consideration.*
- (b) *Residue stockpiles and deposits must be characterised in terms of its –*
- (i) *physical characteristics, which may include –*
- (aa) *the size distribution of the principal constituents;*
 - (bb) *the permeability of the compacted material;*
 - (cc) *void ratios of the compacted material;*
 - (dd) *the consolidation or settling characteristics of the material under its own weight and that of any overburden;*
 - (ee) *the strength of compacted material;*
 - (ff) *the specific gravity of the solid constituents; and*

- (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;*
 - (iii) *infrastructure and man-made features;*
 - (iv) *climate;*
 - (v) *flora and fauna;*
 - (vi) *soils;*
 - (vii) *ground water morphology, flow, quality and usage; and*
 - (viii) *surface water.*
 - (f) *The investigations, laboratory test work, interpretation of data and recommendations for the identification and selection of the most appropriate and suitable site for the disposal of all residue that have the potential to generate leachate that could have a significant impact on the environment and groundwater must be carried out by a suitably qualified person.*

- (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 implemented 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 specifically 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 -*
 - (i) *the environmental classification, including assumptions on which the classification was based;*
 - (ii) *the closure objectives, final land use or capability;*
 - (iii) *conceptual description and details for closure and post closure management;*
 - (iv) *cost estimates and financial provision for closure and post-closure management; and*
 - (v) *residual impacts, monitoring and requirements to obtain mine closure in terms of the Act.*

- (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.

F 5.3 CONTENTS OF CLOSURE PLAN

A closure plan forms part of the EMP and must include the following:

- (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.

G. This section outlines the specific additional requirements that may be set for the operation by the Regional Manager. Additional requirements will only have been set if the Regional Manager is of the opinion that there are specific impacts on the environment which will not be adequately mitigated by the provisions set within the standard version of the Environmental Management Plan. These requirements form part of the Environmental Management Plan and all elements and instructions contained herein must be complied with by the applicant.

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.....20.....

.....
REGIONAL MANAGER

REGION:.....

This document has been compiled by the Directorate: Mine Environmental Management of the Department: Mineral Resources 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:

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Private Bag X 59	Fax: 012 320 6786
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Appendix 1

TO BE READ IN CONJUNCTION WITH # C.2 to # C.5 OF THE ENVIRONMENTAL MANAGEMENT PLAN

The primary objective of the work programme to which this Environmental Management Plan pertains is to locate and assess diamond deposits. All personnel executing the work programme are fully trained and have wide experience of their duties and all work is undertaken under the direct supervision of a geologist. In addition, all work is undertaken in accordance with the ISO 14001 certification that De Beers RSA Exploration has held for its Environmental Management System since April 2001.

Kimberlite is a volcanic rock, which occurs randomly and is not specific to any discrete host (country) rock lithology. Furthermore, because of erosion, kimberlites may have no surface expression and in many instances are hidden beneath surficial cover, which can reach tens of metres in thickness, and, thus, the detection thereof requires sophisticated methodologies and resources. Consequently, exploration programmes must be structured accordingly and commence with a reconnaissance sampling phase.

Prospecting for kimberlite is a dynamic, results driven, operation which proceeds in phases, the outcome of which cannot be predicted or predetermined. Excepting the reconnaissance soil/stream-sampling or geophysical surveying phase, the scope of each subsequent phase is dependent on the results of earlier phases. The results of the reconnaissance prospecting will indicate the areas over which the subsequent phases of work are required. These subsequent (follow up) phases can include soil and/or stream sampling, geophysical surveys, pitting/trenching and/or drilling and first stage bulk sampling as well as activities such as detailed drilling and further bulk sampling (pitting/trenching and/or drilling) to gather the additional information required in support of feasibility studies. The sites for the follow-up phases of work cannot be identified in advance nor can the phases be quantified in advance. However, experience has shown each phase of physical prospecting to be short term and usually less than 2 months in duration.

Because of the time required to treat samples and to interpret their results, as well as to plan, schedule and resource the follow-up phases of work required, the phases of work will not follow directly after one another.

If required, soil samples will be collected within a 30m radius per sample from areas not drained by streams, with up to 30 litres of both surface and sub-surface material (to 20 cm depth for geochemical samples) collected. Vehicle access is limited and most of the sample sites are accessed on foot by 2 man sampling teams. Soil samples are normally spaced on a 1 km to 500m grid for reconnaissance work, but the grid might have to be reduced to between 300m and 50m for any follow-up work. Minimal, temporary, disturbance is caused to the environment by soil sampling and there are no lasting impacts.

If required, stream samples will be collected from sections of streams known as trap sites which may comprise boulders, rock barriers, potholes etc that have the ability to slow down and trap heavy minerals. The volume of the sample is dependent on the catchment area. The sites are dug to depths of not more than 1 m to access any heavy minerals that might have settled to the bottom of the trap site. The field teams (of 2 to 4 persons), will rehabilitate all stream sample sites after collecting the samples and equilibrium is restored by the natural water flow. Minimal, temporary, disturbance is caused to the environment by stream sampling and there are no lasting impacts.

Any rocks that are suspected to be kimberlite will be collected alongside stream and soil samples for petrographic studies. These samples will normally be collected by using geological hammers and would not exceed 2kg in mass. The process has no significant impact on the natural

Small diameter drilling has no lasting impact on the natural environment; disturbance is restricted to small, localized, areas. Drill holes containing water can be left open for the benefit of the land owner/occupier provided a form indemnifying the Company is signed by the land owner/occupier.

Large diameter drilling (LDD) up to 600mm diameter, is used for bulk sampling and is the preferred method when there is the need to sample deeper than is practical by means of pitting and/or trenching. The diameter and depth of the boreholes drilled will be determined by such factors as cost, proposed bulk sampling, availability of drilling machines, and the volume of sample required. LDD will take place after small diameter drilling.

LDD rigs and compressors are truck mounted, each with its own diesel generated power. Samples generated (drill chips) are de-slimed on site using a mobile screen and the resultant product discharged directly into bulk bags for transport to a sampling plant either at a central facility in Johannesburg or at a nearby site, dependent on the amount of sample processing to be carried out. Water used in the de-sliming process is recycled using a system of plastic lined earth dams and/or 'portapools'. No local power source is used.

LDD is short term, drilling on any kimberlite is usually completed in 3 months or less but is dependent on the size and morphology of the kimberlite and weight of samples required. LDD has no lasting impact on the natural environment; disturbance is restricted to localized areas, but is greater than that of small diameter drilling.

Duration	5 = >life of the operation, 3 = as long as the life of the operation, 1 = less than a month
Extent	5 = impact extends beyond the site, 3 = impact extends to whole site, 1 = impact only at area of activity [site = prospecting right]

Frequency of activity	5 = every day, 3 = weekly, 1 = monthly or less frequently
Frequency of impact	5 = almost every time the activity takes place, 3 = less than 50% of the time that the activity takes place, 1 = seldom or never

Any aspect rated at 64% and above is considered to be significant

Consider in rating of duration and extent	For pollution - consider toxicity, volume and the nature of the substance For habitat disturbance - consider the sensitivity of the environment, the area affected and the speed of rehabilitation For biodiversity impact - consider the red data rating of the species and the range of the species For resource use – amount of resource used, resource availability and whether it is renewable or not.
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For all mitigation	5 = in place and effective 3 = in place and partially effective 1 = no mitigation in place
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ACTIVITY of concern	ASPECT of the activity which interacts with the environment	IMPACT	SEVERITY = Duration + Extent		SEVERITY	PROBABILITY = frequency of activity + frequency of impact		PROBABILITY	SIGNIFICANCE = Severity x Probability	MITIGATION in place when assessing severity and probability				MITIGATION (percentage)	Related EMP	Related Procedure
			Duration	Extent		Frequency of activity	Frequency of impact			Engineered preventive measures	Monitoring mechanism	Competence	Operational control			
Use of power	Use of electricity (office, sanitation, kitchen, sampling plant)	Potential for wasteful use of power through not applying conservative use & air pollution	2	5	7	5	1	6	42	3	3	3	3	60		
Use of water	Use of water (kitchen, sanitation, sampling plant)	Potential for waste of water through not applying conservative use.	2	5	7	5	1	6	42	3	3	3	3	60		May need water use permit
Vehicle use	Disposal of oil rags/ loose fibre for spill clean-up	Potential pollution of soils and water if not handled correctly.	2	2	4	2	1	3	12	4	4	4	4	80		EXP-PR-05
Vehicle use	Storage, use and disposal of fuel, oil, grease and lubes.	Potential pollution of soils and water if not handled correctly.	2	2	4	5	1	6	24	4	4	4	4	80		EXP-PR-02
Vehicle use	Use of petrol or diesel	Potential for wasteful use of a nonrenewable natural resource.	3	1	4	5	1	6	24	3	5	5	5	90		EXP-PR-02
Vehicle use	Vehicle emissions (diesel)	Potential pollution of air (above legal limits)	3	1	4	5	1	6	24	3	5	5	5	90		EXP-PR-02
Vehicle use	Storage and disposal of tyres and batteries	Potential for fire and pollution of air and soil if not handled correctly.	1	1	2	3	1	4	8	4	4	4	4	80		EXP-PR-02
Exploration	Trenching and pitting	Potential impact on and pollution of soil, natural vegetation, biodiversity, heritage sites, water and air. Potential impact on employee safety.	1	2	3	1	5	6	18	4	4	4	4	80		EXP-PR-04
Exploration	Access to site	Potential to cause soil erosion, impact on natural vegetation, biodiversity, heritage issues and on I&AP.	2	2	4	5	3	8	32	4	3	3	4	70		EXP-PR-02
Exploration	Field sanitation, applicable to temporary field camps, contractors and employees involved in drilling, pitting and trenching	Potential to pollute soil, ground and surface water.	1	2	3	3	1	4	12	4	3	3	4	70		EXP-PR-02
Exploration	Field general waste, applicable to contractors and employees involved in drilling, pitting and trenching	Potential pollution of soil and water. Potential visual impact if not disposed of correctly.	1	2	3	5	3	8	24	3	3	4	4	70		EXP-PR-02
Exploration	Hazardous waste generation	Potential pollution of soil, surface water and ground water. Potential visual impact	1	2	3	2	1	3	9	3	4	4	4	75		EXP-PR-02
Exploration	Fire hazard (due to prospecting, vehicle access or temporary camp sites)	Potential pollution of air, impact on vegetation and animals.	2	5	7	2	1	3	21	4	4	4	4	80		EXP-PR-02, EXP-PR-05
Drilling	Use of drilling agent (oil & "rofoam").	Potential pollution of soil and ground water by drilling agent.	1	3	4	2	1	3	12	1	5	2	4	60		EXP-PR-03
Drilling	Potential leakage of oil from heavy drilling machinery	Potential pollution of soil, surface and ground water.	1	3	4	2	3	5	20	4	3	3	4	70		EXP-PR-03
Drilling	Site clearing and drill tailings dispersion	Potential to cause soil erosion, impact on natural vegetation, biodiversity, heritage issues and on I&AP.	2	2	4	2	5	7	28	1	3	3	4	55		EXP-PR-03, EXP-PR-06
Drilling	Release of flammable gas	Potential pollution of air, soil and ground water if an explosion occurs. Safety of interested and affected parties.	1	1	2	2	1	3	6	3	5	4	4	80		EXP-PR-03, EXP-PR-05

ANNEXURE "A" TO THE ENVIRONMENTAL MANAGEMENT PLAN

THE FARM FRASERDALE 184 AND OTHERS, BARKLEY WEST DISTRICT
NC 30/5/1/1/2/2346 PR

FARM	PORTION	OWNER	ADDRESS	TELEPHONE
FRASERDALE 184	RE	Daffue Christiaan Francois Daffue Mercia Theresa	PO Box 136 DANIELSKUIL 8405	083 515 8821
FARM 185	1 PORTSMOUTH	Vlok Familietrust IT288/2000 Jacobus Adriaan Louw Vlok Marilyn Vlok	Rian Vlok PO Box 1400 Oos Londen	(W & Fax) 043 742 0721 084 581 3290
FARM 185	RE	Fourie Vennootskap Trust IT39/2002 Matthys Johannes Fourie 'thys@fourievennootskap.co.za'	Hester Helena Fourie Christiaan Jacobus Krstein PO Box 100990 BRANDHOF 9324	051 4104 160
FARM 203	FARM	info@fourievennootskap.co.za'	Jan Jeremias de Villiers Fourie Bus 371 Daniëlskuil 8405	086 505 0145 083 321 2896

The farms Fraserdale 184, 185 and 203 Barkly West District, Northern Cape
(REF.NO. NC 30/5/1/1/2/2346 PR)

Estimation of rehabilitation costs for prospecting rights:

The amount suggested as the initial financial provision for prospecting rights is based on the following:

In the early stages of the prospecting rights, work is restricted to geophysics, surface sampling and narrow diameter drilling. In normal circumstances rehabilitation forms part of the prospecting programme, but should this fail to happen for some reason, rehabilitation would only be required for drill sites, where drill tailings would be returned to the hole, which is then capped as required and topsoil returned to the collar position. To do this work costs are estimated as follows:

Typically 6 holes drilled would require:

2 x labourer for 3 days = R 900

1 x supervisor/driver = R 5,250

Vehicle costs R3 / km x 1560 = R 4,680

Sub-total R 10,830

At the later stages of work, small prospecting pits and trenches and larger mini-bulk sample pits may need to be established, as described in the EMPLan and following the procedures laid out in Section F of the EMPLan. Large diameter drilling may alternatively be used, in which case small pits are also created to act as sumps for drill water. In either case, these pits would normally be filled and rehabilitated as part of the prospecting programme, but if this failed to happen, these would need to be filled and topsoil returned to cover them. The costs for this work are estimated below:

Per set of 2 x 100 t pits – return of subsoil, smoothing and return of topsoil:

Contract earthmoving (2 days) = R 12,000

1 x supervisor = R 4,200

Vehicle costs R3 / km x 1240 = R 3,720

Sub-total R 19,920

Monitoring visit x 1

1 x geologist (1 day) R 3,100

Vehicle costs R3 / km x 1200 = R 3,600

Sub-total R 6,700

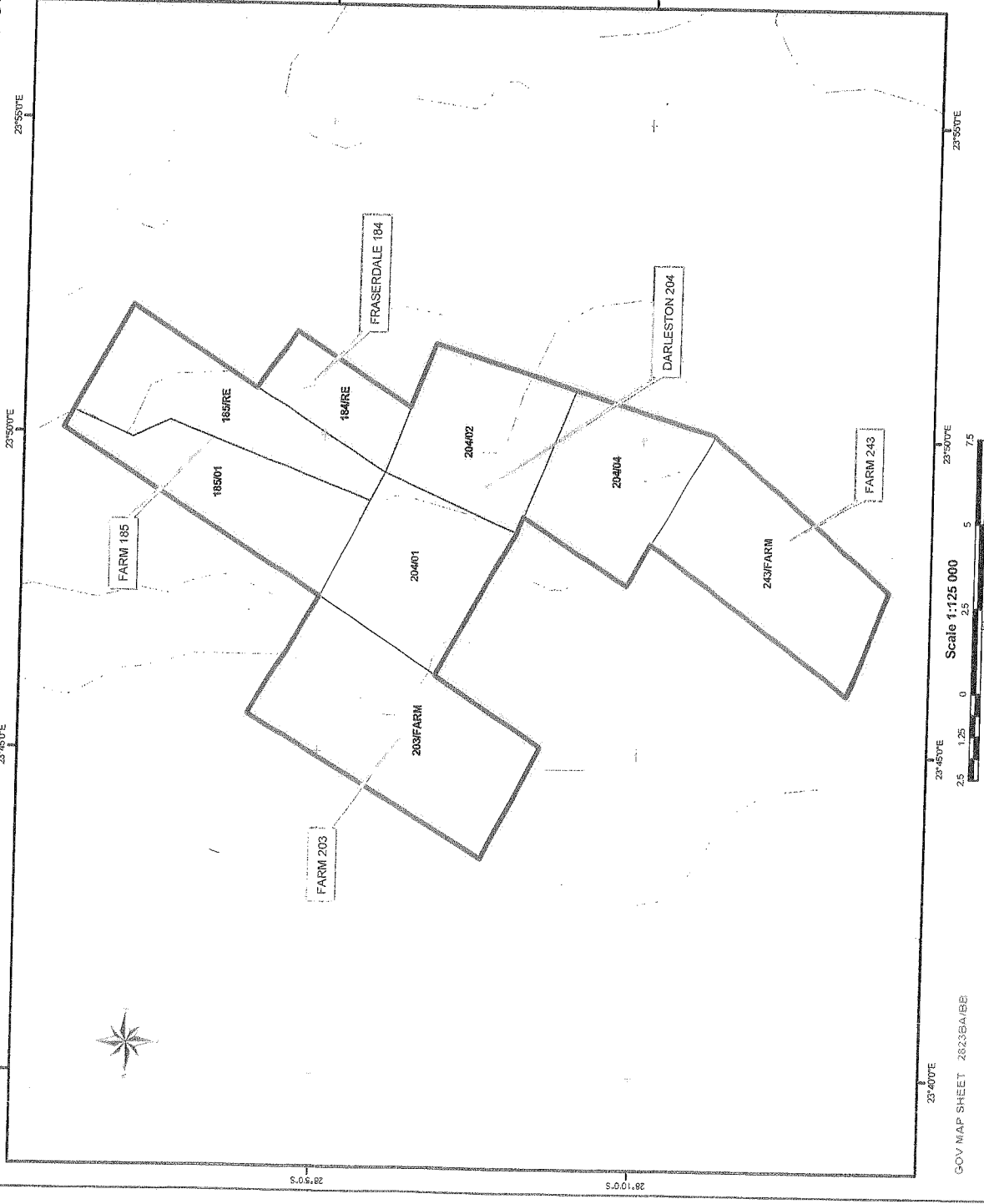
Combined total R 37,450

Any progression of the project to full-scale bulk sampling will require an upward revision of the financial provision, as part of the annual EMPLan performance review. However this stage would only be reached once the preceding work described above has been completed and the results evaluated.

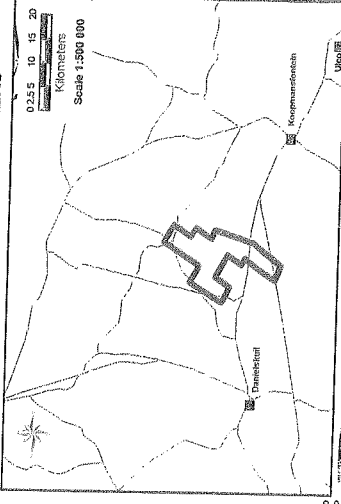
SIGNATURE: A I MACDONALD

DATE: 1 November 2010

PLAN AS REFERRED TO IN REGULATION 2.2 IN FORCE IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (28 OF 2002).
IN SUPPORT OF AN APPLICATION FOR A PROSPECTING RIGHT IN TERMS OF SECTION 16 OF THE AFORESAID ACT.



THE FARM DARLESTON 204 & OTHERS



DESCRIPTION OF LAND UNDER APPLICATION FOR A PROSPECTING RIGHT

Portions 1, 2 and 4 of DARLESTON 204, RE of FRASERDALE 184, RE and portion 1 of FARM 185, FARM 203 and FARM 243

Represents an area of land in extent
13438.8934 Hectares

Magisterial District of
BARKLY WEST

NORTHERN CAPE PROVINCE

LEGEND

- City / town / villages
- Roads
- Land under Application
- Farms
- Magisterial Districts
- Province border
- LITHOLOGY
- Description
- Sand, calcrete and gravel cover
- Dolomite
- (Campbell Rand Sub-group)

NAME OF APPLICANT:

DE BEERS CONSOLIDATED MINES LTD

SIGNATURE OF APPLICANT:

NAME: N. Scheepers

DATE: 17/05/2010

Plan Approved:

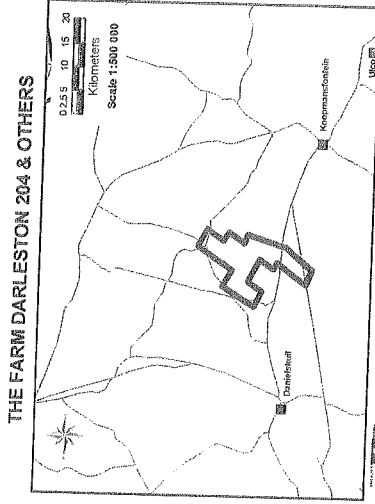
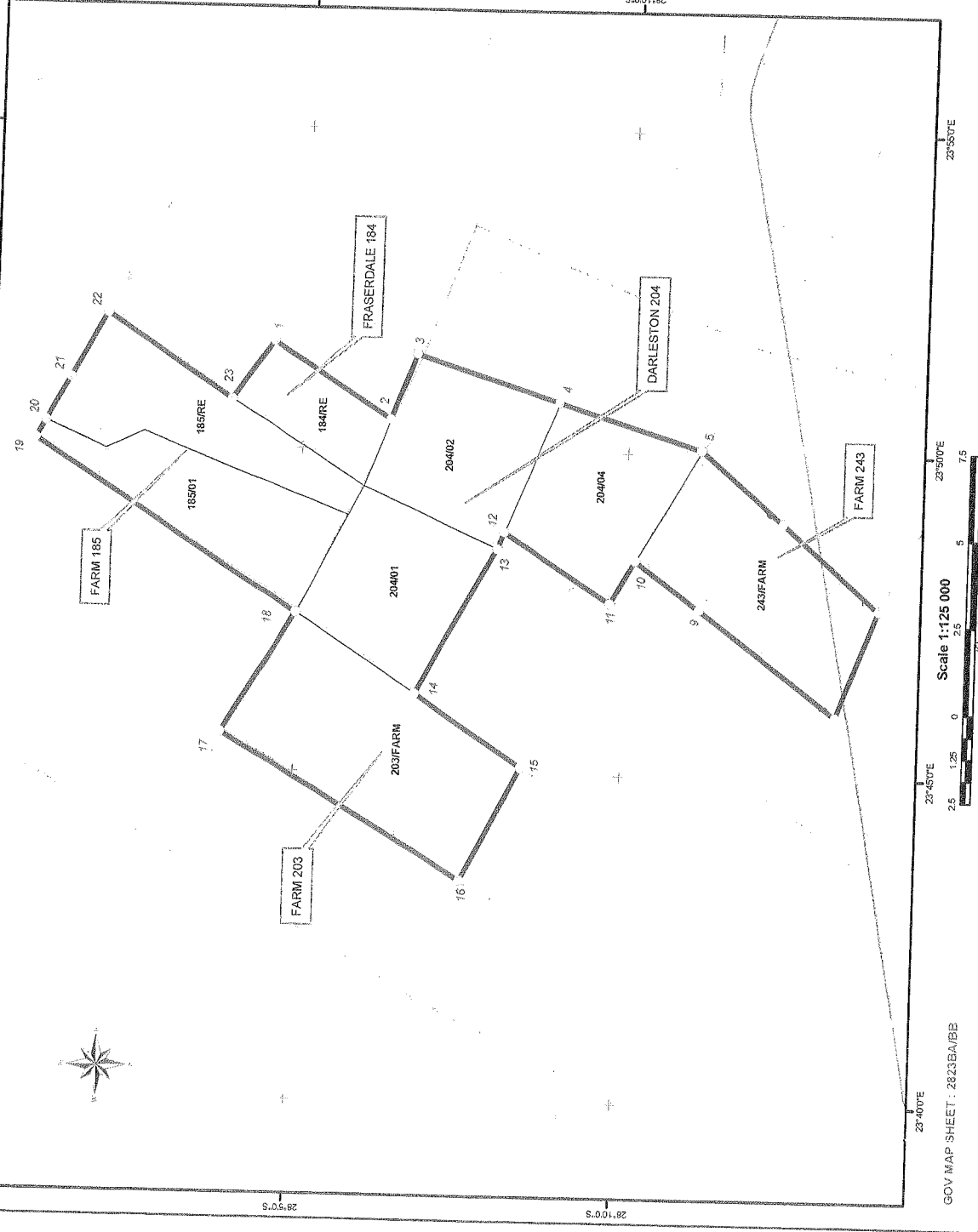
Regional Manager

NORTHERN CAPE PROVINCE

Department of Minerals & Energy

DATE:

PLAN AS REFERRED TO IN REGULATION 2.2 IN FORCE IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (28 OF 2002).
IN SUPPORT OF AN APPLICATION FOR A PROSPECTING RIGHT IN TERMS OF SECTION 16 OF THE AFORESAID ACT.



DESCRIPTION OF LAND UNDER APPLICATION FOR A PROSPECTING RIGHT
Portions 1, 2 and 4 of DARLESTON 204, RE of FRASERDALE 184, RE and portion 1 of FARM 185, FARM 203 and FARM 243
The figure numbered :
1, 2,22, 23, 1
Represents an area of land in extent
13438.6934 Hectares
Magisterial District of
BARKLY WEST
NORTHERN CAPE PROVINCE

- LEGEND**
- City / town / villages
 - Roads
 - Land under Application
 - Farms
 - Magisterial Districts
 - Province border
- NOTES**
- Please see Table 2 for any specific servitudes registered against the title deeds.
 - Coordinates for polygon of land under application: refer to accompanying listing file for details.

NAME OF APPLICANT :
DE BEERS CONSOLIDATED MINES LTD
De Beers
SIGNATURE OF APPLICANT:
NAME : *IN S. M. P. S. P. M.*
DATE : *17/08/2010*

Plan Approved:
Regional Manager
NORTHERN CAPE PROVINCE
Department of Minerals & Energy
DATE :