



**mineral resources**

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Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

**NAME OF APPLICANT:** De Beers Consolidated Mines Proprietary Limited

**REFERENCE NUMBER:** NC 30/5/1/1/2/11530 PR

**ENVIRONMENTAL MANAGEMENT PLAN**

**SUBMITTED**

**IN TERMS OF SECTION 39 AND OF REGULATION 52 OF THE MINERAL  
AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002,  
(ACT NO. 28 OF 2002) (The Act)**

**STANDARD DIRECTIVE**

Applicants for prospecting rights or mining permits, are herewith, in terms of the provisions of Section 29 (a) and in terms of section 39 (5) of the Mineral and Petroleum Resources Development Act, directed to submit an Environmental Management Plan strictly in accordance with the subject headings herein, and to compile the content according to all the sub items to the said subject headings referred to in the guideline published on the Departments website, within 60 days of notification by the Regional Manager of the acceptance of such application. This document comprises the standard format provided by the Department in terms of Regulation 52 (2), and the standard environmental management plan which was in use prior to the year 2011, will no longer be accepted.

**IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED.**

| ITEM           | COMPANY CONTACT DETAILS   |
|----------------|---|
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## CONTENTS

|  |    |
|--|----|
| 1 REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation .....  | 5  |
| 2 REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio- economic conditions and cultural heritage..... | 14 |
| 3 REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts.....                  | 24 |
| 4 REGULATION 52 (2) (d): Financial provision. ....   | 26 |
| 5 REGULATION 52 (2) (e): Planned monitoring and performance assessment of the environmental management plan. ....  | 30 |
| 6 REGULATION 52 (2) (f): Closure and environmental objectives.....   | 30 |
| 7 REGULATION 52 (2) (g): Record of the public participation and the results thereof. ....  | 31 |
| 8 SECTION 39 (3) (c) of the Act: Environmental awareness plan.....   | 37 |
| 9 SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment. ....   | 38 |
| 10 REGULATION 52 (2) (h): Undertaking to execute the environmental management plan. ....   | 38 |

## LIST OF FIGURES

|   |    |
|---|----|
| Figure 1: Soil types of the area under application. ....                      | 6  |
| Figure 2: Vegetation type of the area under application. ....                 | 8  |
| Figure 3: Google Earth satellite imagery for the land under application ..... | 29 |

## LIST OF TABLES

|   |    |
|---|----|
| Table 1: Mammal species that occur in the area.....     | 9  |
| Table 2: List of birds known to occur in the area ..... | 10 |
| Table 3: Summary of the prospecting activities.....     | 15 |

## APPENDICES

|  |  |
|--|--|
| Appendix I: Baseline Risk Assessment                             |  |
| Appendix II: EXP-02-PR Prospecting Operational Procedure         |  |
| Appendix III: EXP-03-PR Drilling Procedure                       |  |
| Appendix IV: EXP-06-PR Prospecting Site Rehabilitation Procedure |  |
| Appendix V: Consultation with Interested and Affected parties    |  |
| Appendix VI: Regulation 2(2) plans                               |  |

## **1 REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation**

### **1.1 The environment on site relative to the environment in the surrounding area.**

#### **1.1.1 Land Use**

The land in the property is being used for commercial farming (grazing of livestock), as well as game farming, hunting and irrigation. The area is also used as residence for farm workers as well as their respective families with supporting infrastructure such as water points supplied by wind pumps, shed, farmhouse and enclosures (kraals). There is no land development reported by the interested and affected parties. The closure objectives will be to return the land to its current state of land use.

#### **1.1.2 Topography and drainage**

The general area is relatively flat, at an average elevation of between 1082 and 1104m above sea level (Refer to 1:50,000 topographic map sheets 2824AD and 2824BC). The area applied for is approximately 7km north east of the Vaal River, and 12km south west of the Harts River.

#### **1.1.3 Soils**

The soil for the area, which is applied for comprises two soil types (Figure 1). The first is a red-yellow Apedal (code Ae44), freely drained soil of approximately 300mm deep. Andesitic to basaltic lavas (Ventersdorp Supergroup), shales (Prince Albert Formation), as well as calcrete and Dwyka tillite contribute to the Apedal soil formation. The second soil type is a primacutanic red structural horizons dominant soil (Dc5), which is contributed by Dwyka tillite and Prince Albert shale.

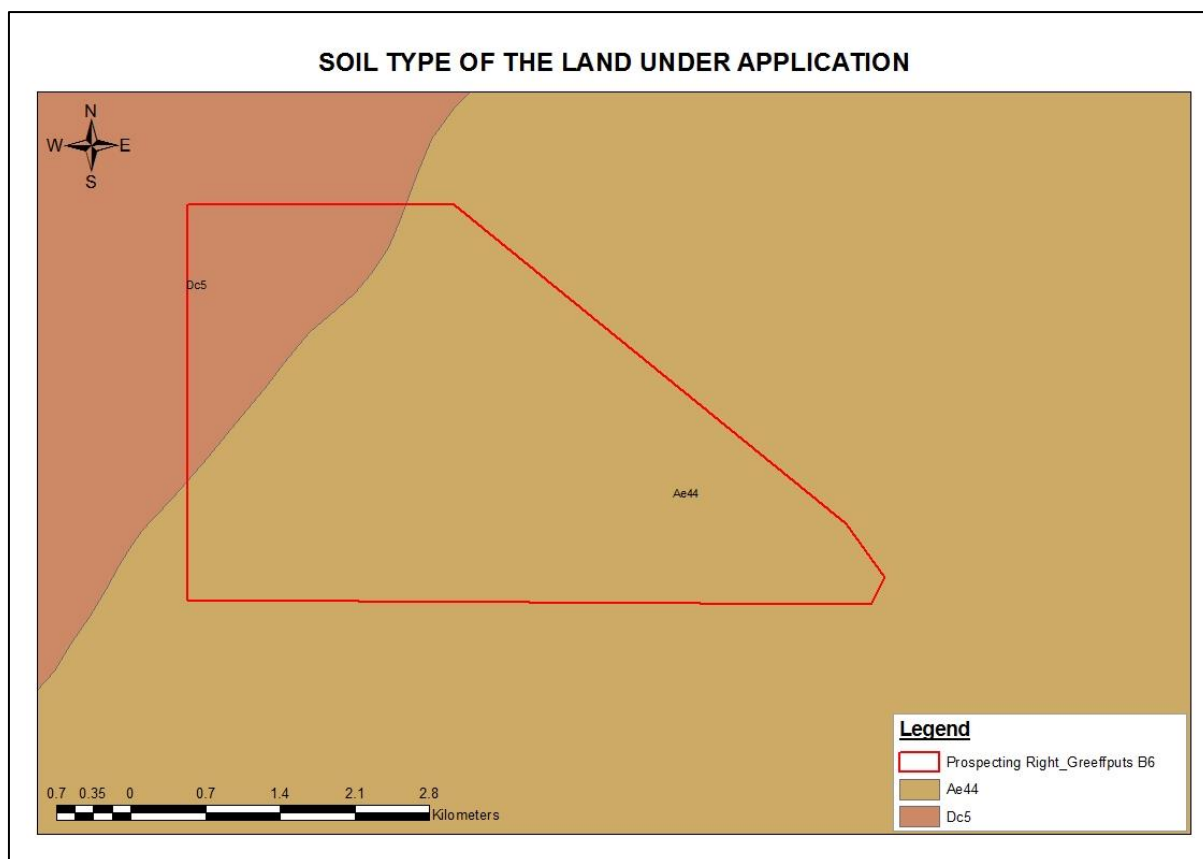


Figure 1: Soil types of the area under application.

#### 1.1.4 Groundwater levels

There is no permanent surface water in the area. The farms rely on ground water, with the water table reported to be approximately 60 metres below surface. The depth of water encountered will be included in the progress report if intersected during drilling.

#### 1.1.5 Vegetation

The Northern Cape consists mainly of grasslands, shrubs, a minor amount of acacia thorn trees, as well as some Karoo vegetation. The vegetation of the area applied for belongs to the Savanna Biome; mainly Kimberley Thornveld and Schmidtsdrif Thornveld (Figure 2). The following sections describe the vegetation types mentioned above.

##### a) KIMBERLEY THORNVELD (SVk4)

This vegetation type is rated as least threatened with a conservation target of 16%. Only a small portion (<2%) is statutorily conserved in the Vaalbos National Park as well as in Sandveld Bloemhof Dam and S.A. Lombard Nature Reserves and only

18% is transformed by cultivation. Erosion is very low. The important and biogeographically important taxon this vegetation types are described below:

### **Important Taxa**

Tall Trees: *Acacia erioloba* (d)

Small Trees: *Acacia Karroo* (d), *A. mellifera* subsp. *detinens* (d), *A. tortilis* subsp. *heteracantha* (d), *Rhus lancea*.

Tall Shrubs: *Tarchonanthus camphoratus* (d), *Diospyros pallens*, *Ehretia rigida* subsp. *rigida*, *Euclea crispa* subsp. *ovata*, *Grewia flava*, *Lycium arenicola*, *L. hirsutum*, *Rhus tridactyla*.

Low Shrubs: *Acacia hebeclada* subsp. *hebeclada*(d), *Anthospermum rigida* subsp. *pumilum*, *Helichrysum zeyheri*, *Hermannia comosa*, *Lycium pilifolium*, *Melolobium microphyllum*, *Pavonia burchellii*, *Peliostomum leucorrhizum*, *Plinthus sericeus*, *Wahlenbergia nodosa*.

Succulent Shrubs: *Aloe hereroensis* var. *hereroensis*, *Lycium cinereum*.

Graminoids: *Eragrostis lehmanniana*(d), *Aristida canescens*, *A. congesta*, *A. molissima* subsp. *argentea*, *Cymbopogon pospischili*, *Digitaria argyrograpta*, *D. eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *E. scoparius*, *Eragrostis rigidior*, *Heteropogon contortus*, *Themeda triandra*.

Herbs: *Barleria macrostegia*, *Dicoma schinzii*, *Harpagophytum procumbens* subsp. *procumbens*, *Helichrysum cerastioides*, *Hermboetia odorata*, *Hibiscus marlothianus*, *Jamesbrittenia aurantiaca*, *Lippia scaberrima*, *Osteospermum muricatum*, *Vahlia capensis* subsp. *vulgaris*.

Succulent Herbs: *Aloe grandidentata*, *Piранthus decipiens*.

### **Biogeographically Important Taxa**

Low Shrub: *Blepharis marginata*

Succulent Shrub: *Euphorbia bergii*

Graminoid: *Panicum kalahereense*

Herbs: *Helichrysum arenicola*, *Neuradopsis bechuanensis*

Succulent Herbs: *Lithops aucampiae* subsp. *aucampiae*, *Tridentea marientalensis* subsp. *marientalensis*.

### **b) SCHMIDTSDRIF THORNVELD (SVk6)**

This vegetation is rated as least threatened with conservation target of 16%, with very low to low erosion.

### **Important taxa**

Small trees: *Acacia mellifera* subsp. *Detinens* (d), *A. tortillis* subsp. *Heteracantha* (d), *Ficus cordata*, *Ziziphus mucronata*.

Tall shrubs: *Tarchonanthus camphoratus* (d), *Grewia flava*.

Low shrubs: *Aptosimum albomarginatum* (d), *Barleria rigida* (d), *Monechma incanum* (d), *Pentzia incana* (d), *Hermannia affinis*, *H. comosa*, *Ptycholobium biflorum*, *Zygophyllum pubescens*.

Semiparasiticshrubs: *Thesium lineatum*.

Graminoids: *Aristida meridionalis* (d), *Enneapogon cenchroides* (d), *Eragrostis lehmanniana* (d), *E. obtuse* (d), *Enneapogon desvauxii*.

Herbs: *Lepidium bonariense* (d), *Amaranthus praetermissus*, *Heliotropium ciliatum*, *Indigastrium parviflorum*, *Osteospermum muricatum*, *Seddera capensis*, *Stachys hyssopoides*.

### Biogeographically important taxa

Low shrubs: *Blepharis marginata*.

Succulent shrubs: *Prepodesma orpenii*

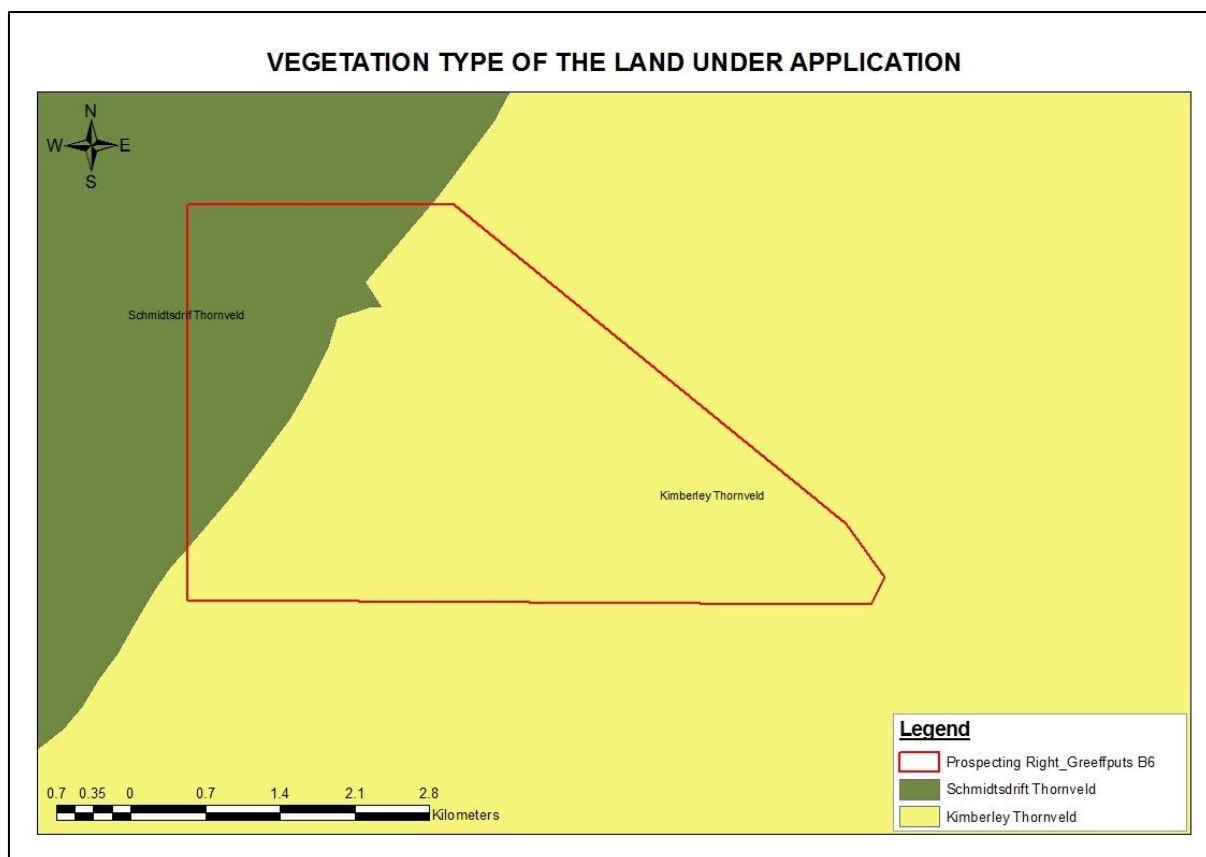


Figure 2: Vegetation type of the area under application.



Source: Mucina, L. and Rutherford, M.C. (editors), 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria.

No specific protected trees have been reported. The above list is applicable to vegetation types as a whole, thus it is not known whether the particular species are found in the area applied for.

### 1.1.6 Fauna

Naturally, the area would support a large variety of grazers 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. Mammal species that are known to naturally occur in the region as a whole are summarized in Table 1 below. This however does not imply that all of these species will occur at any given place in the region as a whole (source: Duncan Butchart, 2001, Wildlife of the Lowveld, common animals and plants). No specific protected animal species were reported.

Table 1: Mammal species that occur in the area.

| Common name       | Scientific name        |
|-------------------|------------------------|
| <u>Carnivores</u> |                        |
| African Wild Dog  | Lycaon pictus          |
| African Wild Cat  | Felis lybica           |
| <u>Herbivores</u> |                        |
| African Elephant  | Loxodonta Africana     |
| <u>Ungulates</u>  |                        |
| Kudu              | Tragelaphus stesiceros |
| Springbok         | Atidorcas marsupialis  |
| Mountain Reedbuck | Redunca fulvorufula    |
| Black Wildebeest  | Connochaetes gnou      |
| Red Hartebeest    | Alcelaphus caama       |
| White Rhinoceros  | Ceratotherium simum    |
| Buffalo           | Syncerus caffer        |
| Zebra             | Equus quagga           |
| Eland             | Taurotragus oryx       |
| Giraffe           | Giraffa camelopardalis |

Based on the distribution of Red Data Bird species, the following list of birds may be present (Table 2), (Source: The Eskom red data book of birds of South Africa, Lesotho and Swaziland, Barnes K.N, 2000).

Table 2: List of birds known to occur in the area

| Species category | English name                | Scientific name               | Reporting rate (%) |
|------------------|-----------------------------|-------------------------------|--------------------|
| Endangered       | Saddlebilled Stork          | Ephippiorhynchus senegalensis | 2-18               |
|                  | Damara Tern                 | Sterna balaenarum             | 2-23.9             |
| Vulnerable       | African Penguin             | Spheniscus demersus           | >11.4              |
|                  | Pinkbacked Pelican          | Pelecanus rufescens           | <2                 |
|                  | Cape Gannet                 | Morus capensis                | 11.8-24.9          |
|                  | Bank Cormorant              | Phalacrocorax neglectus       | 8.4-30.1           |
|                  | Cape Vulture                | Gyps coprotheres              | 8-20               |
|                  | African Whitebacked Vulture | Gyps africanus                | 2-18               |
|                  | Lappetfaced Vulture         | Torgos tracheliotos           | 2-28.5             |
|                  | Whiteheaded Vulture         | Trigonoceps occipitalis       | 2-9.9              |
|                  | Tawny Eagle                 | Aquila rapax                  | 2-13               |
|                  | Martial Eagle               | Polemaetus bellicosus         | 7-17               |
|                  | Bateleur                    | Terathopius ecaudatus         | 25-39.9            |
|                  | African Marsh Harrier       | Circus ranivorus              | 2-11               |
|                  | Lesser Kestrel              | Falco naumanni                | > 17               |
|                  | Blue Crane                  | Anthropoides paradiseus       | > 22               |
|                  | Corncrake                   | Crex crex                     | 2.5-3.5            |
|                  | Kori Bustard                | Ardeotis kori                 | >28.5              |
| Ludwig's Bustard | Neotis ludwigii             | >25                           |                    |
| Red Lark         | Certhilauda burra           | >24.9                         |                    |

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.

### 1.1.7 Protected Areas

There are farmhouses present in the area, although their ages are unknown. Graves have been reported on portion 1 (Victoria) of the farm Greeffputs 169

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; however heritage and archaeological impact assessment will be done if the prospecting project proceeds to advanced phases and if graves are found to be present will be reported in the progress report.

An application was submitted on the SAHRA (case number 6814) website as required. To date no response has been received.

### **1.2 The specific environmental features on the site applied for which may require protection, remediation, management or avoidance.**

Due to the fairly dry nature of the area and the existing land use, the vegetation, soil and groundwater are the main elements that need protection in general. In particular, damage to farm water points and water boreholes (windmills) must be avoided. Prospecting activities will be at least 50 metres away from above-mentioned sites. Damage to farmhouses (with associated graves) and other structures such as fences, gates, farm roads or tracks will be avoided.

During drilling activities water strike depth is noted and any significant changes in water volumes are recorded. Plugging of the hole will be investigated as an option in the case where drilling goes through an aquifer. Moreover, during the more extensive drilling in Phases 4-6 water quality may be monitored to mitigate contamination of groundwater. Ground water pollution will be mitigated through the use of only environmentally-friendly drilling additives and the proper closing of boreholes on completion.

Other aspects to be addressed in all the prospecting work (although not raised directly) through the Environmental Management Plan include:

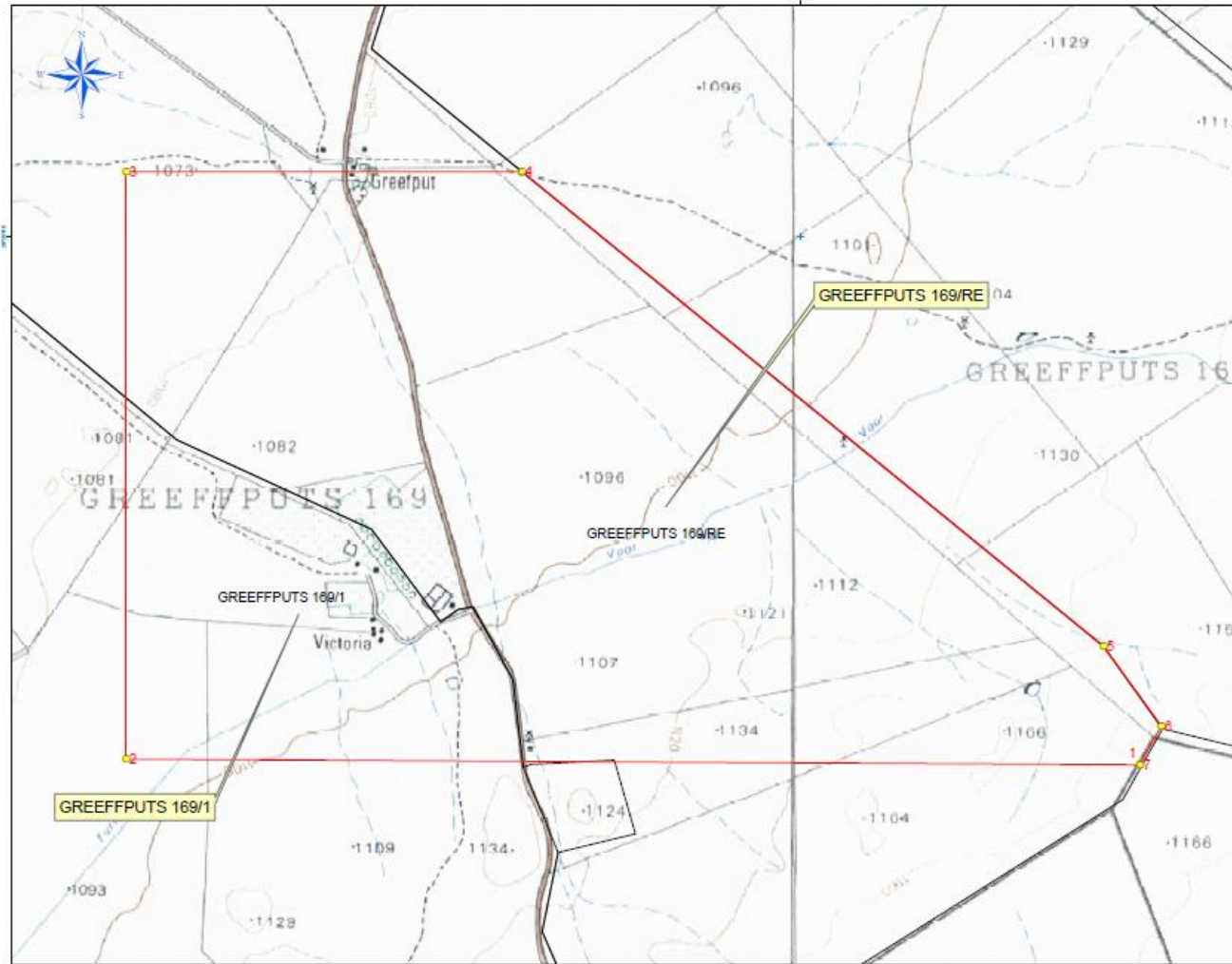
- Avoiding soil pollution - preventing and controlling hydrocarbon (oil or hydraulic fluid) spills.
- Avoiding veld fires - no open fires are allowed during prospecting and precautionary measures and controls will be in place for machinery.
- Avoiding littering - proper waste management (removal and disposal) will be practiced.
- Minimising vegetation destruction - by limiting the creation of new tracks, clearing minimal areas for drilling and rehabilitating effectively. Disturbed areas may need to be fenced off to allow vegetation recovery.
- Avoiding excessive noise & dust - this will require specific measures depending on the nature of work. Prospecting is mostly restricted to daylight hours so noise will be limited to these periods. Excessive noise is only expected at or near the drill rig. Proper hearing protection for all the employees and visitors will be provided to mitigate this risk. Personal protective equipment (PPE) includes goggles and dust masks (where necessary) for the employees and site visitors. Dust suppression measures on the farm tracks can be taken where this is a problem.
- Impact on fauna - prospecting activities take place over a limited area for a relatively short duration, impacts on fauna will be minimal. No relocation of

livestock will be necessary. However, where expensive game is present, it may be necessary to relocate them to adjacent enclosures on agreement with the farmer. No prospecting activities will be conducted during the relocation.

### **1.3 Map showing the spatial locality of all environmental, cultural/heritage and current land use features identified on site.**

The Regulation 2.2 plan attached shows the general features of the area, such as farm dams, wind pumps, buildings, ruins and roads/tracks; no other specific features have been identified.

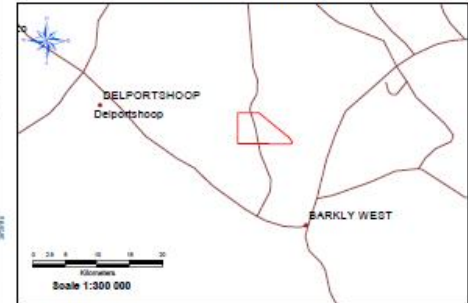
**PLAN AS REFERRED TO IN REGULATION 2.2 IN FORCE IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (28 OF 2002).  
IN SUPPORT OF AN APPLICATION FOR A PROSPECTING RIGHT IN TERMS OF SECTION 16 OF THE AFORESAID ACT.**



GOV MAP SHEET : 2824AD AND 2824BC



B6 GREEFFPUTS 169



**DESCRIPTION OF LAND UNDER APPLICATION FOR A PROSPECTING RIGHT**

A portion of the Remaining Extent of the farm Greeffputs 169,  
A portion of Portion 1 (Victoria) of the farm Greeffputs 169.

The figure numbered :  
1, 2, ..6, 7, 1

Represents an area of land  
in extent

**1548.5600 Hectares**

Magisterial District of  
BARKLY WEST

**NORTHERN CAPE PROVINCE**

**LEGEND**

- City / town / villages
- Roads
- ▭ Land Under Application
- ▭ Farms
- ▭ Magisterial Districts
- ▭ Province border

**NOTES**

- 1) Please see Table 2 for any specific servitudes registered against the title deeds.
- 2) Coordinates for polygon of land under application: refer to accompanying listing file for details.

NAME OF APPLICANT :  
**DE BEERS CONSOLIDATED MINES PROPRIETARY LIMITED**

SIGNATURE OF APPLICANT:

NAME : \_\_\_\_\_ (Print)

DATE : \_\_\_\_\_

Plan Approved:

\_\_\_\_\_  
Regional Manager  
**NORTHERN CAPE PROVINCE**

Department Mineral Resources

DATE : \_\_\_\_\_

Part D of Form B Annexure 1, Application for Prospecting Right  
Coordinates referred to in plan. Coordinates based on Geographic, WGS84 (Datum)

| <b>NODE ID</b> | <b>X</b>  | <b>Y</b>   |
|----------------|-----------|------------|
| 1              | 24.519241 | -28.446646 |
| 2              | 24.461709 | -28.446329 |
| 3              | 24.461709 | -28.413001 |
| 4              | 24.484186 | -28.413002 |
| 5              | 24.517163 | -28.439913 |
| 6              | 24.520455 | -28.444433 |
| 7              | 24.519241 | -28.446646 |

**1.4 Confirmation that the description of the environment has been compiled with the participation of the community, the landowner and interested and affected parties.**

During the consultation process, the parties were asked about the land use and the environment, both verbally and in the form of a short questionnaire. Please refer to the report on consultation.

**2 REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio-economic conditions and cultural heritage.**

**2.1 Description of the proposed prospecting or mining operation**

Prospecting for kimberlite is a dynamic, result driven operation which proceeds in phases, the outcome of which cannot be predicted or predetermined. Excepting the first phase, the scope of each subsequent phase is dependent on the results of earlier phases. The results of the reconnaissance sampling and geophysics in Phase 2 will indicate the areas over which the subsequent phases of work are required. These subsequent phases include core drilling, followed by first stage large diameter drilling (LDD) for bulk sampling as well as activities such as detailed drilling, high resolution ground geophysical surveys and further bulk sampling to gather 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 although some estimates are presented in this work programme, as presented below. Note that these estimates can be considered as being reasonably accurate for the first year of work only. The prospecting will take place in phases as described in the Prospecting Work Plan (PWP) summary in Table 3 below.

Table 3: Summary of the prospecting activities.

| <b>Phase</b>                          | <b>Activity</b><br>(what are the activities that are planned to achieve optimal prospecting)  | <b>Skill(s) required</b><br>(refers to the competent personnel that will be employed to achieve the required results) | <b>Timeframe</b><br>(in months for the activity) | <b>Outcome</b><br>(What is the expected deliverable, e.g. Geological report, analytical results, feasibility study, etc.) | <b>Timeframe for outcome</b><br>(deadline for the expected outcome to be delivered) | <b>What technical expert will sign off on the outcome?</b><br>(e.g. geologist, mining engineer, surveyor, economist, etc) |
|---------------------------------------|---|---|--|---|---|---|
| <b>1</b><br><b>Desktop Study</b>      | a) Review of available information<br>b) Gap analysis<br>c) Identify potential target areas<br>d) Identify appropriate prospecting techniques | Geologist & geophysicist  | 1 month<br>1 month<br>3 months<br>1 month        | Report on specific targets with sampling and/or survey plan   | Month 6   | Geologist   |
| <b>2</b><br><b>Target delineation</b> | a) Geological mapping<br>b) Ground geophysical surveying (magnetic and gravity methods)<br>c) Integration & interpretation of new information | Geologist, Geophysicist, Field officer and Laboratory technicians   | 1 month<br>3 Months<br>2 months                  | Geophysical survey data<br>Geophysical 2D model report<br>Targets for drilling<br>Drilling plan                           | Month 12  | Geologist and Geophysicist  |

|  |   |  |  |   |          |  |
|--|---|--|--|---|----------|--|
| 3<br><b>Testing of targets and initial diamond testing</b> | <p>a) Detailed geophysical surveying using various techniques (delineation of kimberlites)</p> <p>b) Core drilling (up to 63.5 mm), maximum depth 600 m.</p> <p>Logging of core</p> <p>c) Drill sample analysis (petrography, mineral chemistry, physical properties)</p> <p>d) Possible initial micro diamond sampling and recovery (at least 600kg of sample)</p> <p>e) Integration &amp; interpretation of new information, planning</p> | Geologist, field officer, drill contractors, laboratory technicians, petrologist, geophysicist                           | <p>2 months</p> <p>3 months</p> <p>3 months</p> <p>3 months</p> <p>1 month</p> | <p>Geological report with drill logs</p> <p>Analytical results of samples, initial micro-diamond stone density</p> <p>Integrate drill data to refine geophysical model</p> <p>Asses if further work may be required</p>             | Month 24 | Geologist, Petrologist and Geophysicist  |
| 4<br><b>Kimberlite delineation and diamond testing</b>     | <p>a) Detailed ground geophysical surveys &amp; modeling</p> <p>b) Core drilling to a maximum of 600 m (3x core holes)</p> <p>c) Drill sample analysis (petrography, density, micro-diamond content)</p> <p>d) Integration &amp; interpretation of new information, planning</p>  | Geologist, field officer, drill contractors, laboratory technicians, petrologist, micro-diamond specialist, geophysicist | <p>1 month</p> <p>3 month</p> <p>4 months</p> <p>2 months</p>                  | <p>Initial geophysical pipe shape model</p> <p>Geological report with drill logs, initial 3D geological model</p> <p>Micro-diamond grade potential estimate</p> <p>Analytical results of samples</p> <p>Mini-bulk sampling plan</p> | Month 34 | Geologist, Geophysicist, Diamond specialist and Petrologist                      |
| 5<br><b>Mini Bulk Sampling</b>                             | <p>a) Large diameter drilling to extract approx. 200 tonne sample</p> <p>b) Transport &amp; processing of 200 tonne sample</p> <p>c) Diamond recovery and examination</p> <p>d) Integration &amp; interpretation of new information and planning</p>  | Geologist, field officer, drill contractors, laboratory technicians, diamond specialist.                                 | <p>2 months</p> <p>4 months</p> <p>3 months</p> <p>1 month</p>                 | <p>Analytical results of samples</p> <p>Drill report and initial diamond grade estimate</p> <p>Asses if further work may be required</p>  | Month 44 | Geologist, Mineral Resource Manager, Advanced Project Manager Diamond specialist |



|                                       |  |  |          |   |          |  |
|---------------------------------------|--|--|----------|---|----------|--|
| <b>6</b><br><b>Full Bulk Sampling</b> | a) Large diameter drilling (2x holes)                                  | Project Manager, Geologists, field officers, drill contractors, laboratory technicians, plant operators, micro-diamond specialist,   | 4 months | Analytical results of samples<br>Geological report with drill logs, revised model, diamond grade and value estimate<br>Decision on pre-feasibility studies (decision on application for renewal of prospecting right) | Month 59 | Project Manager, Advanced Project Manager and Mineral Resource Manager |
|                                       | b) Processing of approximate 400 tonne sample (depends on requirement) | Project Manager, Geologists, field officers, drill contractors, laboratory technicians, plant operators, micro-diamond specialist,   | 3 months |   |          |  |
|                                       | c) Micro- and macro-diamond recovery and examination                   | Project Manager, Geologists, field officers, drill contractors, laboratory technicians, plant operators, micro-diamond specialist,   | 4 months |   |          |  |
|                                       | d) Integration & interpretation of new information                     | Project Manager, Geologists, field officers, drill contractors, laboratory technicians, plant operators, micro-diamond specialist, diamond specialist, mineral resource manager. | 4 months |   |          |  |

### **2.1.1 The main prospecting activities (e.g. access roads, topsoil storage sites and any other basic prospecting design features).**

Access to the site will be on foot and/or vehicles using existing tracks and gates on the property, thus creating minimal impacts on vegetation. Samples collected from drilling operation are transported offsite for analysis and storage.

Geological mapping of possible areas of interest is carried out in conjunction with ground geophysical surveys. Geological mapping and geophysical survey work has minimal impact on the environment. Geophysical surveys may be conducted by air (helicopters or fixed wing aircraft) or on the ground. If airborne surveys are planned, surface owners will be consulted beforehand to assess the possible problems that could arise due to noise, so that the survey plans can be adjusted accordingly.

Ground geophysical surveys are carried out on foot, usually by teams consisting of two people or more using highly specialised equipment. The equipment are used to measure properties of rocks below the surface. All geophysical instruments are powered by rechargeable batteries and have minimal impact on the environment. The size of the survey area will vary between 500m x 500m to 4km x 4km depending on the size of the targeted block, and survey lines will be spaced at maximum of 100m and minimum of 20m interval between the lines. Station locations along the lines will be spaced between 20m and maximum 50m. The first and last station locations on the survey line are marked using biodegradable material tied to a shrub or tall grass for orientation. The material is removed once the survey is completed.

Any rocks that are suspected to be kimberlitic will be collected for petrographic studies. Small samples, not exceeding 2kg mass per sample, will be collected manually by using geological hammers on outcrop. The process has no significant impact on the natural environment.

If the prospecting techniques above indicate that there are kimberlites on the property, small diameter drilling will be conducted to test for their presence and economic potential. Boreholes will be sited on a practical basis, in consultation with the land owner.

Core drilling will be carried out on indicator mineral or geophysical anomalies to test for the presence of kimberlite. The holes may be vertical or inclined depending on the drill plan objectives. Inclined holes are usually set up between 60 degrees and 90 degrees to the horizontal. The final borehole depth will be determined by the geologist and will depend on the type of anomaly and geological conditions, including overburden. The diameter of core drilled doesn't usually exceed 120mm and it is determined by factors such as cost, proposed core sampling and purpose. Core holes might also be used as pilot holes for large diameter drilling holes. Core holes allow more accurate determination of geology of the kimberlite.

Core drilling normally uses a truck or trailer mounted hydraulic surface drill rig with a mounted compressor, each with its own diesel generated power. No local power sources are used. Drilling is short term and may take anything from a few days taking up to two months to complete, but this depends on the target being investigated. Supporting equipment include a diesel bowser, water bowser and a crew bus.

The large diameter (17 inches or 23 inches) drilling for bulk sampling in phases 5 and 6 depends on the result of phases 3 and 4. Bulk sampling is conducted using a truck-mounted hydraulic surface drill rig with supporting equipment including an air compressor (stand-alone or on-board), water bowser, diesel bowser, equipment truck, cyclone and shaker screens. Large diameter drilling usually involves direct mud circulation method to establish the hole and drill through the overburden, casing installation followed by reverse-flood airlift-assist (RFALA) techniques to recover samples.

### **2.1.2 Plan of the main activities with dimensions.**

Prospecting activities are summarised in Table 3 above. Phase 1 is a desktop study which takes a year to complete and results are then used to generate plans for Phase 2. The actual plans and layout of completed activities from phases 1 and 2 will be incorporated in the annual EMP performance assessment report (PAR) and cannot be determined at this stage. The exact techniques to be utilised for surveys and how large the targets might be are also unknown at this stage. However, the following is a summary of typical layout footprint of each activity to be undertaken per target:

- Ground geophysical surveys: from 500mx500m to 4kmx4km depending on size of the block with line separation of between 100m and 20m (see section 2.1.1).
- Core drilling: 20m x 20m site preparation per drill site. Hole diameter per drill hole is ~85mm
- Large diameter drilling for bulk sampling purposes (mini and full bulk sampling (Phases 5 and 6): 40m x 40 m site preparation per drill site. Hole diameter can be either 17" (inches) or 23" depending on recommendations from MRM technical specialists.

Planning for each phase is a dynamic process and advancement of each phase depends on the results of its predecessor as per Table 3 above. Plans are generated as the results become available and these are included in the EMP PARs as per legislative requirements.

### **2.1.3 Description of construction, operational, and decommissioning phases.**

There will be no permanent development or erection of infrastructure on the project for the duration of the envisaged prospecting activities under the current application. The project team, including De Beers' employees, will be accommodated off site and commute daily to and from project sites.

Phase 1 is a desktop study and has no impact on the environment under application. It entails a review of all available information to identify gaps in knowledge and potential target areas within the area of interest.

Phase 2 entails mainly ground geophysical surveys over identified targets and does not involve excavating, damaging or probing of the ground or environment. However, site preparation for Phases 3-6 will be conducted according to layout footprint for drilling as described under 2.1.1 above will take place with due consideration of potential environmental impacts and mitigation measures put in place to manage them. Site preparation involves controlled clearing of grass and small shrubs to level the site for setting up the drill rig and supporting equipment. The site is then cordoned off with steel wire mesh and small gate to avoid accidental access by livestock/game or unauthorised entry by individuals for the duration of drilling activities. It is important to note that photographs of the site are taken prior to any work being conducted. Additional photographs are taken during the site establishment, physical drilling activities, after site clean-up and rehabilitation. The site is signed-off by the project geologist, land owner and the drilling contractor after site rehabilitation as an acknowledgement by all parties that the site was left in an acceptable state and any sludge and/or waste generated from site has been disposed of accordingly.

During the closure phase of the project, a final report outlining work done, results and areal coverage of prospecting activities is submitted to the Department of Mineral Resources in terms of Section 43(4) of the Mineral and Petroleum Resources Development Act 28 of 2002.

A closure plan with description of activities, methods for mitigation and closure costs will be submitted with final assessment of environmental management plan and environmental risk report. Monitoring of rehabilitated areas forms part of the decommissioning phase and continues until a closure certificate is obtained.

### **2.1.4 Listed activities (in terms of the NEMA EIA regulations).**

There are no listed activities during the early stages. The phases of work that may include NEMA listed activities are in phases 5 and 6, depending on the scale of any vegetation clearing required or access tracks created, in certain geographical areas of the country. However as this site in general is not a protected or sensitive area

and is currently used for commercial farming, no current listed activities have been identified. However the NEMA EIA process will be applied ahead of work in phase 5 and beyond, to ensure that local sensitive sites are avoided and impacts properly managed.

## **2.2 Identification of potential impacts**

Baseline risk assessment was conducted and is attached as Appendix I. The main potential impacts in terms of the environment have been identified as follows;

- Soil erosion due to site clearing and temporary access tracks – access is limited to existing farm tracks and temporary access tracks will be rehabilitated if required (particularly during phases 4-6 where heavy equipment is used and traffic volumes are higher on farm tracks).
- Potential oil/hydrocarbon spillage during drilling and from field vehicles resulting potential soil and water contamination – drip trays and banded heavy duty plastic sheeting are placed under the drill rig and supporting equipment (e.g. diesel bowser and water truck). Any spillages to be treated with suitable biodegradable agents (e.g. OT8)
- The site is then cordoned off with steel wire mesh and small gate to avoid accidental access by livestock/game or unauthorised entry by individuals for the duration of drilling activities.
- Security of game and potential opportunistic farm attacks and/or game poaching by criminals – A communication plan will be in place and farmers will be notified of visitors to the project and expected timelines and duration.

### **2.2.1 Potential impacts per activity and listed activities.**

The main impacts of concerns across all the work planned are;

- use of resources, notably water in the region during drilling activities in phases 3-6. Daily consumption for drilling activities will be limited to 5, 000-10, 000L (5-10m<sup>3</sup>) per day.
- damage to vegetation and grazing land. Existing tracks will be used as far as practically possible and temporary access tracks may be created close to the drill site(s). Veld clearing will be restricted to only small shrubs and grass over a small area as described in 2.1.2 above.
- potential pollution to soil and water by hydrocarbon spillage and/or drilling additives during drilling. Only biodegradable drilling additives will be used.

The main activities that can create such impacts are drilling and the use of vehicles and other machinery, in phases 3 to 6 as per Table 3 above.

### **2.2.2 Potential cumulative impacts.**

If a kimberlite is found, the successive phases of work (from 3 through to 6) could create a cumulative impact on vegetation and soil at the much localised site identified, as well as on access tracks where prospecting activities may contribute to creation of dust; in extreme cases dust suppression may be required. Disturbance and removal of soil has the potential to directly and indirectly impact on vegetation in the prospecting area and also impact wildlife by removing habitat that is used for foraging, burrowing/nest, and breeding.

### **2.2.3 Potential impact on heritage resources**

There are graves reported on portion 1 of the farm Victoria of Greeffputs 169. No other specific heritage aspects were identified; and the area comprises privately owned farms used for commercial and game farming, hunting and irrigation; only the farm workers use them for residential purposes. Prospecting activities could impact on graves but usually it is quite practical to stay well away (at least 50 metres) from such sites. Should graves etc. be within an area planned for drilling (from phase 3 onwards), then a Heritage Impact Assessment should be conducted.

An application was submitted on the SAHRA website on the 18<sup>th</sup> November, as required by SAHRA. A letter was received from SAHRA on the 24<sup>th</sup> November 2014. According to the SAHRA fossil sensitivity map the development is located in an area that is considered to be of low fossil sensitivity. In this instance no palaeontological assessment is required.

### **2.2.4 Potential impacts on communities, individuals or competing land uses in close proximity.**

The area under application is privately-owned and is not communal land. However, farm workers together with their families and owners including their families are considered communities in their respective farms. It is not expected that the prospecting activities will disrupt or negatively impact these individuals and no relocation will be necessary. However, during Phases 3-6, with agreement of the farm owner it may be necessary to relocate some livestock from the grazing enclosure to the next for the duration of drilling activities. Surface use agreements are put in place for these phases and the farm owner is duly compensated by De Beers for the inconvenience. De Beers does not interfere in the relationships between farmers and farm workers. However, any concerns regarding prospecting activities raised by either of the parties are promptly addressed by the project management on site to find an amicable solution.

There is no community in or near the area, and there will be no impact due to close proximity. Barkley West is located approximately 11 km to the south-east of the area applied for.

Some impact on land use may be expected from phase 3 onwards, as the damage to vegetation, although limited in spatial extent, will somewhat reduce the grazing available to the farmers' livestock and/or game. Noise and dust impacts will be minimal as these are localised to the drill site and access tracks, for a short duration only.

From phase 3 there may also be an impact on the state of farm tracks, when heavier vehicles enter the property. Depending on the sites to be accessed, some impact on gates and fences may also be of concern. Dust and noise will be a concern in this case. Water or soil pollution would have an impact on the farming.

The area is accessed by means of a public road, then by private farm tracks which pass through gates in the fences. Aside from the tracks and fences, there are windmills, small reservoirs, sheds/barns, farmhouses and enclosures (kraals) which are avoided.

#### **2.2.5 Confirmation that the list of potential impacts has been compiled with the participation of landowners and interested and affected parties.**

The main concerns are generally around safety of the livestock. Safety concerns will be addressed by controlling access through appointments and by providing the names and ID numbers of staff coming to work on the farms. De Beers's employees must endure to Company rules and policies which state that they may not damage the environment, litter, leave gates open and temper with the livestock. Prospecting activities are conducted during the day. The farmers were also concerned about the impacts prospecting might have on the farmers' livelihood.

Water and safety of the livestock are a concern for the land owners and must be avoided. Water to be used for drilling will have to be sourced either externally or from the stronger boreholes in the area provided the water use permission can be obtained. The water sourced from the property is paid at a rate of a litre to the surface owner.

#### **2.2.6 Confirmation of specialist report appended**

If the project progresses to advanced work (phases 4 to 6) it is recommended that Heritage and Archaeological Impact Assessments be carried out for specific sites where large diameter drilling is planned. Should listed activities under NEMA be considered, then specialist studies may be required in support of Basic Assessment or full Environmental Impact Assessment, whichever is required.

### **3 REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts.**

#### **3.1 Assessment of the significance of the potential impacts.**

Please refer to baseline risk assessment of the potential impacts.

##### **3.1.1 Criteria of assigning significance to potential impacts.**

The criteria applied were a combination of severity and probability of the potential impact. Severity was based on how long the impact would last combined with the extent of that impact relative to the site of the specific activity and the property as a whole. Probability was based on the frequency of the activity taking place combined with the frequency of the unwanted event or situation arising, based on normal operations (track record). Note that these ratings are made with existing mitigation considered.

##### **3.1.2 Potential impact of each main activity in each phase, and corresponding significance assessment.**

Phase 1 – desktop study has no impacts on the environment under application.

Phase 2 – Ground geophysical surveys are conducted by trained teams in the field. It involves measuring rock properties using highly-specialised equipment. This activity does not involve digging, damaging, excavation or destruction of the environment or bedrock. Potential impacts on this phase are soil, water and vegetation due to vehicle traffic when accessing the site. Potential for veld fires impacts on vegetation and may be caused by vehicles, lightning or other accidental causes. These are not rated as significant and will be minimal during this phase. There is no need to relocate farm animals or game during this phase so impact on grazing land and livestock is nil.

Phases 3-6 – Drilling comprises the main activity during these phases. Potential environmental impacts are on soil, water, habitat, livestock/game, grazing land and vegetation.

Oil/hydrocarbon spillage contaminates the soil and has potential to contaminate groundwater and this can be detrimental to the agricultural activities in the region. The significance has been assessed as low due to measures put in place to mitigate events of spillage. Spill kits will be kept on site and inspected regularly and potential leaks from, the rig and supporting equipment are contained by placing drip trays and heavy plastic bunding underneath.



Potential for soil erosion due to increased use of farm tracks by vehicles will be promoted. Where applicable, measures to mitigate soil erosion will be put in place. Dust suppression measures may be put in place where this might be a problem for farm residents and/or domestic animals.

Potential veld fire hazards impact on vegetation (including crops), grazing land, livestock/game, reptiles, birds and habitat. Trained fire fighters and regularly-serviced and inspected fire extinguishers are always available on site to mitigate the risk of an outbreak at the drill site.

Noise will be restricted to the area around the drill site and brief periods when vehicles travel through the farm when accessing or leaving the site. Livestock/game may be relocated temporarily with agreement of the farm owner for the duration of the drilling operations to minimize impact.

Although these impacts are not individually rated as significant, their cumulative impact on vegetation at the specific site(s) and on the state of access tracks could be considered significant.

### **3.1.3 Assessment of potential cumulative impacts.**

If a kimberlite is found, the successive phases of work (3 to 6) could create a cumulative impact on vegetation at the specific site(s) involved, as well as on the state of access tracks. This could become significant if not properly managed.

## **3.2 Proposed mitigation measures to minimise adverse impacts.**

### **3.2.1 List of actions, activities, or processes that have sufficiently significant impacts to require mitigation.**

With reference to Appendix I, although all individual impacts are rated as insignificant, this is because existing mitigation procedures are in place to achieve this rating. These procedures must be followed to avoid these impacts becoming significant.

The potentially significant impacts of advanced drilling & bulk sampling (phases 5 and 6) on the vegetation will require proper management of the specific mitigation required to ensure that the rehabilitated area is re-vegetated, , safe, stable, non-polluting, non-eroded and in a state that is suitable for the agreed post closure land use.

### **3.2.2 Concomitant list of appropriate technical or management options.**

Existing operational procedures EXP-PR-02, 03 and 06 are attached (Appendix II to IV). These document the requirements for technical actions with regard to the different activities. With regard to the potentially significant impact on vegetation in phases 5 and 6 of the work programme, the rehabilitation procedure EXP-PR-06 is most relevant (Appendix IV).

### **3.2.3 Review the significance of the identified impacts**

Provided that the relevant procedures are followed, the significance of all impacts should be low as per Appendix I.

## **4 REGULATION 52 (2) (d): Financial provision.**

### **4.1 Plans for quantum calculation purposes.**

This application for a prospecting right involves various phases of work with various associated activities. Phases 1 and 2 have no impact on the environment and therefore no rehabilitation is required. Phases 3-6 involve mainly drilling (core and large diameter) and affects surface footprints as indicated in section 2.1.1. Actual plans cannot be provided at this stage. However, based on the estimated amount of drilling to be conducted it is estimated that an area of ~0.64ha will be affected and will require rehabilitation by the end of Phase 6.

None of the planned work activities involve digging, trenching, pitting or massive excavation of bedrock. Bulk sampling is conducted by large diameter drilling technique and only affects the area cleared for rig setup and the 17" or 24" hole up to maximum 600m depth in the ground.

### **4.2 Alignment of rehabilitation with the closure objectives.**

The rehabilitation actions form part of each operational phase of prospecting. This ensures that should prospecting stop at any stage, based on the results not being encouraging, the initial physical rehabilitation work has already been completed. Thereafter only monitoring and remedial actions, if required, will need to be carried out to obtain the closure objectives.

### **4.3 Quantum calculations.**

Calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation 54 (1) in respect of each of the phases are summarised below:

| No.                | Description   | Unit | A        | B           | C                     | D                  | E=A*B*C*D       |
|--------------------|---|------|----------|-------------|-----------------------|--------------------|-----------------|
|                    |   |      | Quantity | Master Rate | Multiplication factor | Weighting factor 1 | Amount (Rands)  |
| 1                  | Dismantling of processing plant and related structures (including overland conveyors and power lines) | m3   | 0        | 13          | 1                     | 1                  | 0               |
| 2 (A)              | Demolition of steel buildings and structures  | m2   | 0        | 180         | 1                     | 1                  | 0               |
| 2(B)               | Demolition of reinforced concrete buildings and structures  | m2   | 0        | 266         | 1                     | 1                  | 0               |
| 3                  | Rehabilitation of access roads  | m2   | 0.00     | 32          | 1                     | 1                  | 0               |
| 4 (A)              | Demolition and rehabilitation of electrified railway lines  | m    | 0        | 313         | 1                     | 1                  | 0               |
| 4 (A)              | Demolition and rehabilitation of non-electrified railway lines  | m    | 0        | 171         | 1                     | 1                  | 0               |
| 5                  | Demolition of housing and/or administration facilities  | m2   | 0        | 361         | 1                     | 1                  | 0               |
| 6                  | Opencast rehabilitation including final voids and ramps   | ha   | 0        | 189071      | 1                     | 1                  | 0               |
| 7                  | Sealing of shafts adits and inclines  | m3   | 0        | 97          | 1                     | 1                  | 0               |
| 8 (A)              | Rehabilitation of overburden and spoils   | ha   | 0        | 126047      | 1                     | 1                  | 0               |
| 8 (B)              | Processing waste deposits and evaporation ponds (salt)  | ha   | 0        | 156989      | 1                     | 1                  | 0               |
| 8 (C)              | Processing waste deposits and evaporation ponds (acid and metal)                                      | ha   | 0        | 455971      | 1                     | 1                  | 0               |
| 9                  | Rehabilitation of subsided areas  | ha   | 0        | 105545      | 1                     | 1                  | 0               |
| 10                 | General surface rehabilitation  | ha   | 0.64     | 99851       | 1                     | 1                  | 63904.64        |
| 11                 | River diversions  | ha   | 0        | 99851       | 1                     | 1                  | 0.00            |
| 12                 | Fencing   | m    | 0        | 114         | 1                     | 1                  | 0.00            |
| 13                 | Water management  | ha   | 0        | 37966       | 1                     | 1                  | 0.00            |
| 14                 | 2 to 3 years of maintenance and aftercare   | ha   | 0        | 13288       | 1                     | 1                  | 0.00            |
| 15 (A)             | Specialist study  | Sum  | 0        |             |                       | 1                  | 0.00            |
| 15 (B)             | Specialist study  | Sum  |          |             |                       | 1                  | 0.00            |
| <b>Sub Total 1</b> |   |      |          |             |                       |                    | <b>63904.64</b> |

|                    |                         |           |                           |                 |
|--------------------|-------------------------|-----------|---------------------------|-----------------|
| 1                  | Preliminary and General | 7668.5568 | <b>weighting factor 2</b> | 7668.56         |
|                    |                         |           | 1                         |                 |
| 2                  | Contingencies           |           | 6390.464                  | 6390.46         |
| <b>Subtotal 2</b>  |                         |           |                           | <b>77963.66</b> |
| VAT (14%)          |                         |           |                           | 10914.91        |
| <b>Grand Total</b> |                         |           |                           | <b>88879</b>    |

- Phase 1 – no costs (desktop work)
- Phase 2 – no costs (surficial sampling and geophysical survey work)
- Phase 3 – narrow diameter drilling requires cleaning up of chips/tailings and capping of hole.
- Phase 4 – narrow diameter core drilling with sumps requires cleaning up of spoil, capping of hole, refilling of sumps and levelling topsoil.
- Phase 5 and 6 – large diameter drilling requires sumps cleaning up and capping of the hole, refilling and levelling topsoil.

A financial provision of R 88,879 has been calculated using the assumptions explained in 2.1.2 and table below.

| Activity                            | Surface area affected | Number of drillholes | Hectares       |
|-------------------------------------|-----------------------|----------------------|----------------|
| Core drilling                       | 20m x 20m             | 1                    | 0.04           |
| Core drilling                       | 20m x 20m             | 3                    | 0.12           |
| Large diameter (Mini Bulk Sampling) | 40m x 40m             | 1                    | 0.16           |
| Large diameter (Full Bulk Sampling) | 40m x 40m             | 2                    | 0.32           |
|                                     |                       |                      | <b>0.64 ha</b> |

As per the quantum calculator the total surface area affected is 0.64 ha. All phases of prospecting activities have been included in the quantum calculation. The prospecting activities are in stages and result driven where one stage of work is dependent on the result of the previous stage (refer to PWP). The quantum of this provision will be reviewed annually as required and adjusted should the project progress beyond phase 6 or should the planned scope of work change.

During Phase 1 through 4 the following shall apply:

- Minimal access road opening, generally use existing tracks.
- Mainly rehabilitating drill sites or excavations.
- Monitoring of borehole site every 6 months until DMR inspection. If DMR is satisfied it will grant closure certificate.
- HIA studies to be conducted once per drilling site.
- Botanical study to be carried out where 50% of the vegetation is threatened (protected)
- Water quality will be tested before and after extensive drilling if the drilling is conducted in close proximity to the water bodies.

#### **4.4 Undertaking to provide financial provision.**

The required financial provision of R88,879 for phases 1 through 6 of the work programme, during the first two years of prospecting activities, will be provided in the form of a bank guarantee, through Standard Bank Kimberley, should this prospecting right be granted.

Consultation with the surface owners and review of existing information including satellite imagery (Figure 3) over the area did not reveal legacy environmental liabilities and thus no anticipated cumulative impact have been catered for in the financial provision calculations.

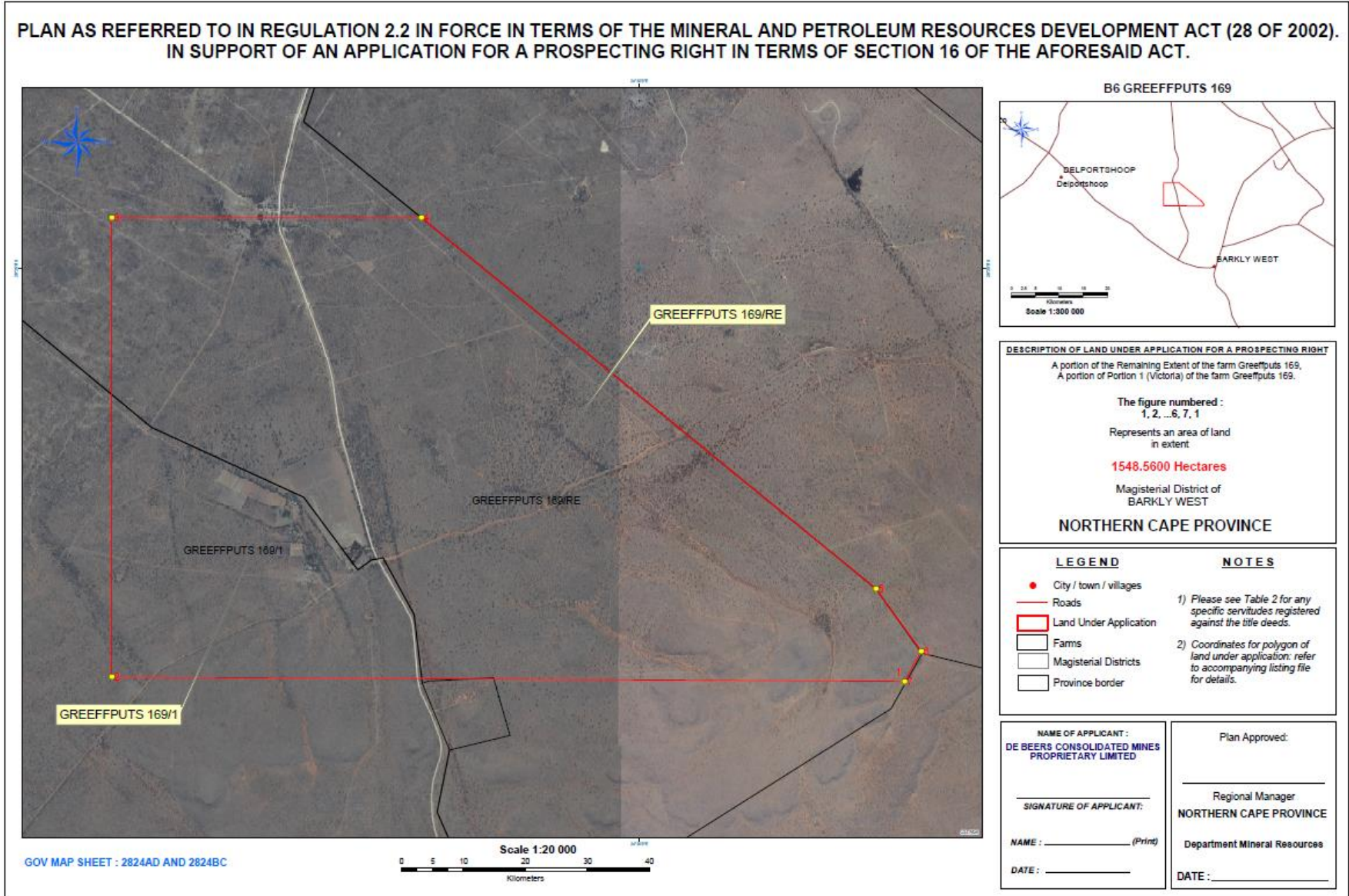


Figure 3: Google Earth satellite imagery for the land under application

## **5 REGULATION 52 (2) (e): Planned monitoring and performance assessment of the environmental management plan.**

### **5.1 List of identified impacts requiring monitoring programmes.**

Damage to vegetation and tracks will require monitoring, thus drill sites will be monitored to observe if the area is re-vegetated (and/or soil erosion measures), safe, stable, non-eroded and in a state that is suitable for the agreed post closure land use.

### **5.2 Functional requirements for monitoring programmes.**

Site visits by the Project Geologist and/or Environmental Coordinator will be required. Photographic evidence will be used to document the state of drilling sites and access tracks.

### **5.3 Roles and responsibilities for the execution of monitoring programmes.**

The Environmental Coordinator must check on the state of rehabilitation of drilling sites and access tracks, either in person or based on photographs of the sites combined with contact with interested and affected parties.

### **5.4 Committed time frames for monitoring and reporting.**

Routine monitoring and reporting will take place at six monthly intervals. The results of this work will be incorporated in the Annual Performance Assessment Report for this Environmental Management Plan.

Should a problem of invasive plants arise, specific monitoring and remedial actions to deal with this will take place on an annual basis as per the procedure EXP-PR-06 (Appendix IV).

## **6 REGULATION 52 (2) (f): Closure and environmental objectives.**

### **6.1 Rehabilitation plan (areas and aerial extent of the main prospecting activities, including the anticipated prospected area at the time of closure).**

The actual plans are not available at this stage since the project area(s) is yet to be determined following Phases 1 and 2. Nevertheless, these plans and those of subsequent phases are typically included in their respective annual EMP PAR as per legislative requirement. It suffices to note, however, that the prospecting activities identified in Phases 3-6 involve small scale surficial disturbance during site establishment. The typical extent of these disturbances is described in section 2.1.2

and applies to the area around the drill site. No excavation, digging or trenching will be undertaken. Bulk sampling will be conducted using the large diameter drilling technique. Drilling activities are short-term and last from a few days to about two months at a time per site. The impact of the activities on the environment is therefore considered low. However, the sites will be monitored regularly and given sufficient time to recover naturally after a few seasons. Where impact is deemed to warrant rehabilitation, proper steps will be put in place to address the environmental issues. Any waste generated during drilling is disposed of at an authorised site. Drill holes are capped using cement mixture or steel plate and are clearly labelled to identify the drillhole. This measure is to avoid accidental fall by animals or people into the drilled holes.

Annual Environmental Management Plan Performance Assessment Reports (EMP PAR) including the locality map showing location of the prospecting activities will be compiled and submitted. The rehabilitated drill sites will be monitored to ensure that the rehabilitated area is re-vegetated, safe, stable, non-polluting, non-eroded and in a state that is suitable for the agreed post closure land use.

## **6.2 Closure objectives and their extent of alignment to the pre-mining environment.**

Early phase activities (phases 1 & 2) cause no or little disturbance to the existing land use. As the project advances to the next stages with minimal disruption to the environment, the closure objective is to ensure that the rehabilitated area is re-vegetated (and/or soil erosion measures), safe, stable, non-polluting, non-eroded and in a state that is suitable for the grazing and other existing land use.

## **6.3 Confirmation of consultation.**

The post-prospecting land use has been discussed with the land owner and the aim is to continue with game and commercial farming on the property, unless an application for a mining right is to be made. The surface owners did not report any other plans for developing the land use.

## **7 REGULATION 52 (2) (g): Record of the public participation and the results thereof.**

### **7.1 Identification of interested and affected parties.**

All affected and interested parties were consulted and involved during the process with regard to the proposed prospecting activities.

### 7.1.1 Identification of community.

There is no community present on or adjacent to the site. This was confirmed by asking the farm owners. Only farm workers and their respective families reside on the farm.

### 7.1.2 Community as landowner.

There is no community present; this was confirmed by asking farm owners.

### 7.1.3 Land Affairs notification.

A letter was only e-mailed to Department of Rural Development and Land Reform (previously Land Affairs). No response has been received to date.

### 7.1.4 Land claims.

A letter was faxed and e-mailed to the Land Claims Commissioner. On the 3<sup>rd</sup> December 2014 a reply had been received which stated that there are currently no restitution claim on the properties.

### 7.1.5 Traditional Authority.

There is no traditional authority identified as there is no community onsite and adjacent areas.

### 7.1.6 Landowners

| BARKLEY WEST DISTRICT, NORTHERN CAPE PROVINCE<br>NC 30/5/1/1/2/11530 PR |                   |                          |  |   |  |
|---|-------------------|--------------------------|--|---|--|
|   | FARM              | PTN                      | SURFACE OWNER  | ADDRESS   | TELEPHONE                                    |
| 1   | Greeffputs<br>169 | Portion of<br>RE         | Zelpy 2648 PTY Ltd<br>Mr & Mrs van Zyl                             | Co/Dir Address:<br>P. O. Box 42730<br>Heuwelsig<br>9332 | 083 627 3147<br>082 822 6561<br>083 516 1232 |
| 2   | Greeffputs<br>169 | Portion 1 of<br>Victoria | Referendum Landgoed<br>PTY Ltd<br>M. G. Olivier & P. B.<br>Olivier | P. O. Box 195<br>Kimberley<br>8300                      | 053 832 4373<br>053 832 4372<br>082 371 6731 |

### 7.1.7 Lawful occupiers of the land.

Same as listed in 7.1.6.



### **7.1.8 Whether other persons' socio-economic conditions will be affected.**

All interested and affected parties were consulted. Main access to the farms is by means of gravel public road, then private farm tracks which pass through gates in the fences, so there is no reason for the proposed prospecting to directly impact on their socio-economic conditions. Prospecting operations may create a limited amount of noise and dust, but this will be limited to parts of the properties where drilling takes place. Provided that the usual precautions are taken to avoid disruption to ground water and to prevent fires, there should be no impact by the prospecting on their socio-economic conditions.

### **7.1.9 Local Municipality.**

Dikgatlong Local Municipality; Barkley West District of the Northern Cape Province.

### **7.1.10 Relevant government departments, agencies and institutions.**

The following government departments, agencies and institutions have been identified;

- Department of Mineral Resources
- Department of Water and Sanitation
- Land Claims Commissioner
- Department of Rural Development and Land Reform
- South African Heritage Resources Agency
- Department Tourism Environment & Nature Conservation
- Dikgatlong Local Municipality

| Government Departments                               | Contact details   |
|--|---|
| Department of Mineral Resources                      | Regional Manager<br>Northern Cape Region<br>Department: Mineral Resources<br>Private Bag X60<br>KIMBERLEY<br>8301   |
| Department of Land Affairs                           | New Public Building<br>6th Floor,<br>Cnr Knights and Stead Street<br>KIMBERLEY<br>8301<br>E-MAIL: <a href="mailto:OBMVULA@ruraldevelopment.gov.za">OBMVULA@ruraldevelopment.gov.za</a><br>FAX: 053 832 8137 |
| Department of Water and Sanitation                   | Chief Director: Northern Cape<br>Private Bag X6101<br>KIMBERLEY<br>8300<br>Tel: 053 830 8801  |
| South African Heritage Resources Agency              | Head Office<br>111 Harrington Street<br>CAPE TOWN<br>8001   |
| Department Tourism Environment & Nature Conservation | MetLife Towers<br>4th Floor<br>C/O Market Square and Stead<br>KIMBERLEY<br>8301<br>E-MAIL: <a href="mailto:bbotes@ncpg.gov.za">bbotes@ncpg.gov.za</a><br>FAX2EMAIL: 086 625 6470                            |
| Land Claims Commissioner                             | 4 - 8 Main Road<br>Hyesco Arcade Building<br>KIMBERLEY<br>8301<br>E-MAIL: <a href="mailto:RBaulackey@ruraldevelopment.gov.za">RBaulackey@ruraldevelopment.gov.za</a><br>FAX: (053)831-6501                  |
| Dikgatlong Local Municipality                        | The Municipal Manager<br>Dikgatlong Local Municipality<br>Private Bag X5<br>Barkley West<br>8375<br>E-MAIL: <a href="mailto:simone@dikgatlong.co.za">simone@dikgatlong.co.za</a><br>TEL: 053 531 0671       |

### **7.1.11 Proof of notification.**

Please refer to the attached report on consultation, which includes summary of the consultation and minutes of the meetings. All correspondence that took place since the first submission will also be attached.

## **7.2 The details of the engagement parties.**

### **7.2.1 Description of the information provided to the community, landowners, interested and affected parties.**

An introductory letter was sent to all parties and responses requested. Meetings were held on 9<sup>th</sup> and 11<sup>th</sup> December 2014 with landowners. The minutes of this meeting and the presentation given are attached on the full consultation report.

### **7.2.2 List of which parties identified in 7.1 above that were in fact consulted, and which were not consulted.**

All landowners listed in 7.1.6.

All Government departments listed above (7.1.10) were notified.

### **7.2.3 List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.**

There are concerns around safety of the livestock and water. The farmers are concerned about the issue of access to the farms, security for themselves and the livestock, and impacts of prospecting on the farming activities. The farmers further requested that they be notified prior to coming to the farms.

### **7.2.4 List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation.**

See 7.2.3 above, these same concerns apply to impacts of prospecting activities.

### **7.2.5 Other concerns raised by the aforesaid parties.**

The following issues were raised by farmers during the meeting and were addressed accordingly:

- Prospecting work will lead to livestock theft.
- Their efforts to sustain and develop eco-farming and to attract tourists, will fail.
- Un-rehabilitated areas can cause animal losses (open bore holes, etc.).

- One of the owners reported that if the roads become dusty it needs to be watered regularly to ensure that dust does not settle on crops.
- One of the owners reported that there was a previous problem with water supply on the farm and that water needs to be supplied by De Beers.

#### **7.2.6 Confirmation that minutes and records of the consultations are appended.**

Consultation letters were sent during December 2014 to:

- Farm owners
- Government parties

Meetings were held on 9<sup>th</sup> and 11<sup>th</sup> December 2014. (All minutes and presentation are also appended to the full consultation report as annexures D to F.)

#### **7.2.7 Information regarding objections received.**

No specific objections were raised to date although the surface owners are concerned about their safety and impacts of prospecting activities on their farms.

#### **7.2.8 The manner in which the issues raised were addressed.**

In terms of the safety, security/ access concerns, De Beers will provide the names and ID numbers of all the people beforehand and inform the surface owners of the exact dates they will be present on the farm.

In terms of loss of animals due to leaving gates opened; this issue will be addressed by briefing De Beers's employees on the implications and consequences of negligence when working in the property.

The procedures referred to in this Environmental Management Plan aim to minimise the impact on the environment. These include measures to avoid pollution of the local water supply.

Use of water from the farms will only be considered should approval be obtained from surface owner only if there is sufficient supply to allow the normal farming activities to continue.

Other aspects to be addressed in all our prospecting work (although not raised directly) through the Environmental Management Plan include:

- Avoiding soil pollution - preventing and controlling oil or hydraulic fluid spills.
- Avoiding grass fires - no fires to be used when prospecting, precautions and controls in place for machinery.

- Avoiding littering - proper waste removal and disposal to be practiced.
- Minimising vegetation destruction - by limiting the creation of new tracks, clearing minimal areas for drilling and rehabilitating effectively. Disturbed areas may need to be fenced off to allow vegetation recovery.
- Avoiding excessive noise & dust - this will require specific measures depending on the nature of work. Prospecting is mostly restricted to daylight hours so noise will be limited to these periods. Dust suppression measures can be taken where this is a problem.
- Impact on fauna - as prospecting takes place in a limited area for a relatively short duration, impacts on fauna will be minimal.

Access and use of contracts will be provided to owners on request.

## **8 SECTION 39 (3) (c) of the Act: Environmental awareness plan.**

### **8.1 Employee communication process.**

All employees and contractors must be inducted in the environmental management system, which explains the potential risks associated with the various prospecting activities. This is a requirement of the system itself (ISO 14001 certified). The material is provided in paper form but also discussed verbally to ensure clarity.

### **8.2 Description of solutions to risks.**

Each activity and associated risks is linked in the baseline risk assessment to relevant mitigation measures to prevent pollution and other significant impacts. The compliance to procedures is the duty of all staff and contractors. This is monitored by supervisors and reported to the management team as well as the environmental officer.

### **8.3 Environmental awareness training.**

The training comprises of the following:

- General induction to the environmental management system including the aspects and impacts register.
- Activity specific induction, based on procedures, including emergency response on spill handling (use of spill kits etc.).
- On site confirmation of these procedures, with demonstrations of requirements.
- Periodic awareness sessions (toolbox talks) on safety, health and environmental topics.

**9 SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment.**

**9.1 The annual amount required to manage and rehabilitate the environment.**

There is no a fixed annual amount. The amount is calculated to address the rehabilitation needed at each phase. This can only be estimated at this stage – with a fair degree of accuracy for the first three years only. If all work is conducted according to the planned timeframe, this will equate as follows:

- Year 1 to Year 2: R 5, 555 (determined as per section 4.3 above assuming 1 core hole)
- Year 3: R 16, 665 (determined as per section 4.3 above assuming 3 core holes)
- Year 4: R 22, 220 (determined as per section 4.3 above assuming 1 LDD hole)
- Year 5: R 44, 439 (determined as per section 4.3 above assuming 2 LDD holes).

**9.2 Confirmation that the stated amount correctly reflected in the Prospecting Work Programme as required.**

The amounts stated in the work programme include the above costs of such rehabilitation work as part of each phase of work. The approach taken is to include such rehabilitation and the cost thereof as part of the planned work and thus as part of the budget submitted.

**10 REGULATION 52 (2) (h): Undertaking to execute the environmental management plan.**

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises EIA and EMP compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Environmental management plan as proposed.

|                        |               |
|------------------------|---------------|
| Full Names and Surname | Anette Basson |
| Identity Number        | 5807310083087 |

**-END-**