case ID: 1445

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

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Ref: NCS 30/5/1/1/3/2/1(941)PR

04 November 2010

REGISTERED MAIL
The Director
SAHRA
P O Box 4637
CAPE TOWN
8000

CONSULTATION IN TERMS OF SECTION 40 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) FOR THE APPROVAL OF THE ENVIRONMENTAL MANAGEMENT PLAN IN RESPECT OF A PORTION OF THE REMAINDER OF LOT 226 VIOOLSDRIFT 262 SETTLEMENT ADMINISTRATIVE DISTRICT: NAMAQUALAND

APPLICANT: TIPULOR (PTY)LTD

1. Attached herewith, please find a copy of the Environmental Management Plan to the received from the above-mentioned applicant, for your comments.
2. It would be appreciated if you could forward any written comments or requirements your department may have in the case in hand to this office on or before **10 January 2011.**
3. Consultation in this regard has also been initiated with other relevant Sate departments.

4. Your co-operation will be appreciated.

Yours faithfully

REGIONAL MANAGER: MINERAL REGULATION
NORTHERN CAPE REGION

SA HERITAGE RESOURCES AGENCY
RECEIVED
11 NOV 2010

File number: NC-S 30/5/1/1/941PR

DEPARTMENT OF MINERALS AND ENERGY

ENVIRONMENTAL MANAGEMENT PLAN

Submitted in support of application for a prospecting right or mining permit.
Section 39 and Regulation 52 of the Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)

Application for a:

Prospecting Right	

Applicant: TipuLor (Pty) Ltd

Farm: Portion of Lot 226 Vioolsdrift South Commonage

District: Namaqualand

Mineral: Limestone

Date: 25 October 2010

A.1 INTRODUCTION

This document aims to comply with the relevant legislation and environmental regulations as apply to applications in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)(MPRDA).

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 of Minerals and Energy (DME) 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 DME to obtain enough information about a proposed prospecting 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.

A.4 USE OF THE DOCUMENT:

The aim is ultimately to (a) gather information from applicants themselves; (b) to assess the impact of the operation based on that information and then (c) to guide the applicant to mitigate environmental impacts to limit damage to the environment.

Section B of the document gathers demographic information about the applicant.
Section C gathers the information that will be used in the Environmental Impact Assessment. The scoring of these for the impact assessment rating in Section D.
Section F (the Environmental Management Plan) of the document is prescriptive and gives guidance to the prospector on how to limit the damage of the operation on the environment. This part may be added to by the regional manager, who has the prerogative to decide whether this Environmental Management Plan will adequately address the environmental impacts expected from the operation or whether additional requirements for proper environmental management need to be set. Where these additional requirements are set, they will appear in Section G of this document.
The Environmental Management Plan (Section F) of the document is legally binding once approved and, in the undertaking contained in Section H, the applicant effectively agrees to implement all the measures outlined in this Environmental Management Plan.

A.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 are 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)
- The National Water Act, 1998 (Act 36 of 1998)
- Mine Safety and Health Act, 1996 (Act 29 of 1996)
- The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).

A.7 WORD DEFINITIONS

In this document, unless otherwise indicated, the following words will have the meanings as indicated here:

Act (The Act)	Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
Borehole	A hole drilled for the purposes of prospecting i.e. extracting a sample of soil or rock chips by pneumatic, reverse air circulation percussion drilling, or any other type of probe entering the surface of the soil.
CARA	The Conservation of Agricultural Resources Act
EIA	An Environmental Impact Assessment as contemplated in Section 38(1) (b)of the Act
EMP	an Environmental Management Plan as contemplated in Section 39 of the Act
Fauna	All living biological creatures, usually capable of motion, including insects and predominantly of protein-based consistency.
Flora	All living plants, grasses, shrubs, trees, etc., usually incapable of easy natural motion and capable of photosynthesis.
Fence	A physical barrier in the form of posts and barbed wire and/or "Silex" or any other concrete construction, ("palisade"- type fencing included), constructed with the purpose of keeping humans and animals within or out of defined boundaries.
House	any residential dwelling of any type, style or description that is used as a residence by any human being
NDA	National Department of Agriculture
NWA	National Water Act, Act 36 of 1998
Pit	Any open excavation
"Porrel"	The term used for the sludge created at alluvial diamond diggings where the alluvial gravels are washed and the diamonds separated in a water-and-sand medium.
Topsoil	The layer of soil covering the earth which- (a) provides a suitable environment for the germination of seed; (b) allows the penetration of water; (c) is a source of micro-organisms, plant nutrients and in some cases seed; and (d) is not of a depth of more than 0,5 meters or such depth as the Minister may prescribe for a specific prospecting or exploration area or mining area.
Trench	A type of excavation usually made by digging in a line towards a mechanical excavator and not pivoting the boom – a large, U-shaped hole in the ground, with vertical sides and about 6 – 8 meters in length. Also a prospecting trench.
Vegetation	Any and all forms of plants, see also Fauna

B. BIOGRAPHIC DETAILS OF THE APPLICANT:

B 1.1 Full name of company applying for permit	**TipuLor (Pty) Ltd**
B 1.2 CC registration number	**2009/023426/07**
B 1.3 Postal address	**International Business Gateway,** **Sanlam Building - South Wing,**
	2nd Floor, New Rd
	Midrand, 1687
B 1.4 Physical address	**Same as postal**
B 1.5 Applicant's telephone number	**+27 (0) 11 653 1740**
B 1.6 Applicant's fax number	**+27 (0) 11 318 0922**
B 1.7 Alternative contact's name	**Sundil Ramluggan**
B 1.8 Alternative contact's cell phone number	**+27 (0)83 554 7769**
B 2.1 Full name of the property on which mining operations will be conducted	**Remainder Plot 226** **Vioolsdrift South Commonage**
B 2.2 Name of the subdivision	**NA**
B 2.3 Approximate center of mining area:	**Latitude S28.80878° South** **Longitude E17.54452° East**
B 2.4 Magisterial district	**Namaqualand**
B 2.5 Name of the registered owner of the property	**Dept Public Works**
B 2.6 His Telephone number	**0277122071**
B 2.7 His Postal address	**Private Bag X5002**
	Kimberley
	8300
B 2.8 Current uses of surrounding areas	
Limited live stock farming. Boer Goats and Dorper Sheep are the most common small stock.	
B 2.9 Other, existing land uses that impact on the environment in the proposed prospecting area?	
Non except for irrigation along the river Appendix 1c	
B 2.10 Name of the nearest town?	
Vioolsdrift 10 Km East	

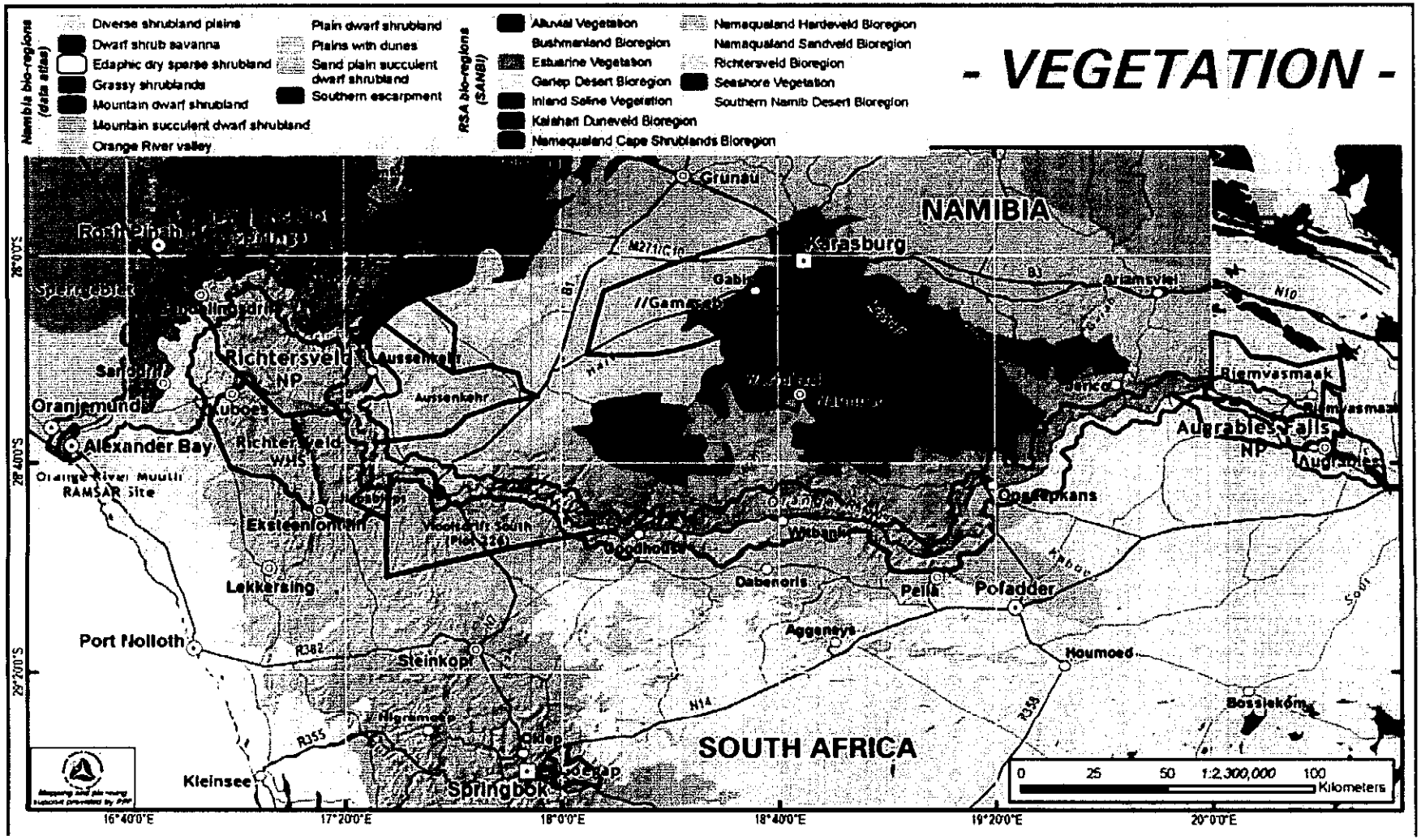
C. ENVIRONMENTAL IMPACT ASSESSMENT:

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

C.1 DESCRIPTION OF THE ENVIRONMENT LIKELY TO BE AFFECTED BY PROPOSED MINING OPERATIONS: (REGULATION 52(2)(a))

ENVIRONMENTAL ELEMENT/ IMPACTOR	VALUE	TICK	OFFICE USE
C 1.1 Description of the landscape surrounding the proposed operation.			
The area form part of the only true desert in South Africa and consist of a large plateau of black limestone, south of the Orange River, west of Vioolsdrif, east of Helskloof. Elevation ranges from 180 – 765 m.			

Diagram 1 Vegetation Map



C 2.11 Estimated depth of the water table		**150+**	metres
C 2.12 Water per day to be utilize for employees		**100**	Liters
C 2.13 Toilet facilities to be made available to	None		
workers?	Pit latrine (longdrop)		
	Chemical toilet	X	
C 2.14 Construction of roads to access the operations	Yes	X	
	No		
Due to the terrain it is envisaged that access may have to be constructed for the drill rig to reach a particular site. The type of access envisaged is limited to removal of large rocks and such access roads may also require 'light' grading to allow the movement of surface mobile vehicles. Several existing tracks exist on the site and these will be used wherever possible.			
C 2.15 Distance of access road(s) to be constructed	0 – 0,5 km		
from a public road to the proposed operations	0,6 – 1,5 km		
	1,6 – 3 km	X	
C 2.16 Trees to be uprooted to construct these access	Yes		
road(s)	No	X	
Vegetation cover on the plateau of black limestone is less than 1% with no trees present therefore any tracks will have no impact on vegetation but steep slopes should be avoided to prevent erosion. Although rainfall is extremely low provision must be made for efficient storm water control to prevent erosion of steep slopes and roadways and elsewhere where required. Refer paragraph C6.8 for mitigating and management measures with regard to erosion control.			
C 2.17 Foreign material, other than the naturally	Yes		
occurring topsoil be placed on the road surface?	No	X	

C.3 TIME FACTOR

C 3.1 Time period that mining operations will be	0 – 6 months		
conducted on this particular site?	6 – 12 months		
	12 – 18 months		
	18 – 24 months		
	>24 months	X	

C.4 HOW WILL THE PROPOSED OPERATION IMPACT ON THE SOCIO-ECONOMIC ENVIRONMENT? (REGULATION 52(2)(b))

ELEMENT/ IMPACTOR	VALUE	TICK	OFFICE USE
C 4.1 Number of people to be employed	• Sub-contractors		
C 4.2 Number of men	•		
C 4.3 Number of women	•		
C 4.4 Where will employees be obtained?	Own		
	Local	X	
C 4.5 How many hours per day will employees work?	Sunrise→ Sunset		
	Less	X	
	More		
C 4.6 Will operations be conducted within 1 kilometer	Yes		
from a residential area	No	X	
C 4.7 How far will the proposed operation be from the	0 – 50 metres		
Nearest infrastructure?	51 – 100 metres		
	150 or more metres	X	

C.6.6 Soil pollution and erosion control (Regulation 70)

C.6.6.1 Topsoil

Given the extremely low rainfall, high evaporation rate and the lack of pollutants used in the prospecting process, no storm water management system nor pollution control will be required. Refer paragraph C6.8 for mitigating and management measures with regard to erosion control.

6.6.2 Description of how spills of oil, grease, diesel, acid or hydraulic fluid will be dealt with.

There are no pollutants other than oil and diesel used in the prospecting operation. As such no polluted water treatment facility will be required.

During prospecting the following management measures will be applicable:

Oil and Grease

- Equipment used in the prospecting process will be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.
- Machinery will not be extensively repaired in any place other than in the workshops in Vioolsdrift. No infrastructure will be constructed during prospecting as facilities are available at Vioolsdrift.
- Temporary work bays for emergency repairs must be provided with an PVC lining with an oil trap from which oil can be bailed out.
- When emergency repairs must be done on site care must be taken not to spill fuel or oil into the soil through the use of drip trays and proper funnels and containers to catch drained oil. If such spill occurs the soil must be removed to drums and hauled as waste for disposal at the municipal site or by Oilkol. Any remaining contaminated soil shall be treated in-situ with Spilisorb or similar product.

Diesel

- Fuel for the earth moving equipment will be stored in mobile tanker trailer.
- Accidental spills will be cleaned up immediately by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.
- Any diesel contamination of soils to be removed and residual soil to be treated with Spillsorb or similar product.
- In the case of a large accidental spill, the staff shall be trained to react as follows:
  - to use any available equipment, shovels, front end loaders, etc. to rapidly construct berms which will contain the spill to a minimum area; and
  - to notify management without delay in order that assistance can be provided, after ensuring that there is no fire or other danger to themselves.
- Equipment used in the prospecting process will be adequately maintained so that during operations it does not spill oil, diesel, fuel, or hydraulic fluid.
- Bore hole sites are GPS located and pegged with a steel dropper. The site is inspected and photographed prior to any disturbance. A drill pad is then cleared, keeping disturbance to the native vegetation to an absolute minimum. Any topsoil removed is stored separately for later reuse. The retained topsoil is used to fill any sumps.
- Plastic lining to prevent oil spillage is used under the rig.
- Any spoils or drilling material is transported off site and disposed of in an approved area. After the drilling operation is complete, each borehole collar is surveyed and the site is rehabilitated and photographed.

6.6.3 Description of the storage facilities available for the above fluids:

Non of the above mentioned fluids will be stored on site and will be transported to the site on a daily basis as needed from Vioolsdrift or Steinkoph.

Significance/Magnitude	Duration	Probability	Timing
Negligible	Transient	Unlikely	Activity

The effect of drilling and trenching is considered minimal.

Ground water

Significance/Magnitude	Duration	Probability	Timing
Negligible	Point	Unlikely	Activity

The effect of drilling and trenching is considered minimal. Repairs and maintenance of equipment will take place at service stations in town.

Air Quality

Significance/Magnitude	Duration	Probability	Timing
Low	Transient	Certain	Activity

The effect of drilling and trenching is considered minimal due to the small scale of the operations.

Noise

Significance/Magnitude	Duration	Probability	Timing
Low	Transient	Certain	Activity

The noise generated by drilling and trenching is considered minimal due to the short time frame, the small scale of the operations and the isolation of the site.

Sites of Archaeological and Cultural interest

Significance/Magnitude	Duration	Probability	Timing
Zero impact	Zero impact	Zero impact	Zero impact

The drilling is transient and only affects a very small area and the changes are slim that any archaeological sites will be disturbed also refer C5 above.

Sensitive landscapes

Significance/Magnitude	Duration	Probability	Timing
Low	Transient	Certain	Activity

Due to the slow recovery rate of disturbances as a result of the extremely low rainfall the area can be regarded as sensitive. If all the mitigating and management measures described in paragraph C6.8 are implemented the impact would however be transient due to the small scale of operations and the fact that large parts of the area is mostly inaccessible, hence well preserved.

Visual aspects

Significance/Magnitude	Duration	Probability	Timing
Zero impact	Zero impact	Zero impact	Zero impact

The prospecting sites are not readily visible from any main road or town.

Regional socio-economic structure

Significance/Magnitude	Duration	Probability	Timing
Highly Beneficial	Life of mine	Certain	Activity

Although prospecting is usually conducted using experienced personnel, a successful prospecting program would potentially increase the life of the mine, and thereby increase the term of employment of the local community, as described in the preceding paragraphs.

Land use
Stockpiled topsoil will be placed on the backfilled excavations intermittently as part of the on-going rehabilitation process thereby restoring the scenic value of the land and its land use as view scape.

Natural vegetation /Plant life
The following general aspects must be implemented to reduce any potential impact:

- Movement areas must be clearly demarcated and any movement outside of these areas must not be allowed
- No ad hoc roads, dumping or topsoil borrowing
- Minimum disturbance
- Direct re-use of removed topsoil on a strip mining basis

Animal life
Stockpiled topsoil will be placed on the backfilled excavation intermittently as part of the on-going rehabilitation process to promote natural re-vegetation, thereby restoring animal habitats temporarily lost.
The presence and activity of the heavy earth moving equipment will "chase" the animals to the vast expanse of similar habitat surrounding the affected area. During prospecting activities all staff must be educated about the role of wildlife in ecology and the tourism economy and warned against poaching. Management should conduct field inspections of the surrounding area of the mine for snares.

Surface water and Ground-water
The following measures must be implemented immediately to avoid contamination of surface and ground water:

- construct domestic and industrial temporary storage facility with pollution control measures.
- construct waste collection points and remove all solid waste from site and dispose of at municipal waste site on a weekly basis (do not bury or burn on site)
- maximize recycling of process water

Should these attenuation measures be implemented, the effect on surface water and groundwater will be minimal.
All topsoil which is removed prior to any activity will be stockpiled in berms (no higher than 2m) along with its resident seed bank and vegetation cover to an area above the proposed development. This berm will then serve a storm water control function in the unlikely event of surface water run-off.

Air quality
While existing dust generation has no noteworthy environmental impact on surround areas, dust should be controlled in the interest of improved worker health and safety.
In this instance periodic wetting of the manoeuvring areas or even an annual application of a dust palliative can be considered. (No used oil or diesel is to be sprayed on the roadway for dust suppression).

Noise
Despite noise having no impact on other uses / public given the isolation of the site, continue to pursue methods of mining which reduce noise in the interest of worker health and safety.

with an update of the rehabilitation cost. 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 program was compiled shall be carried out and added as a corrective action.

C.9 Closure and Environmental objectives: (Regulation 52(2)(f))

C.9.1 Intended end use for the area prospected after closing of operations.

The environment affected by the prospecting operations shall be rehabilitated, as far as is practicable, to its natural state. Land use will be the same as before prospecting with the same production with regard to small stock farming. 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.

C.9.2 Description of what the environment will look like after a closure certificate has been obtained.

Closure objectives

The closure objective is to leave the site in as safe and self-sustaining a condition as possible and in a situation where no post-closure intervention is required to ensure that the rehabilitation measures prove successful. The aim is to ensure a stable environment to allow sustainable vegetation re-growth. To facilitate this, the following is required:

Effective shaping of the final faces and backfilled overburden dumps with erosion control facilities above all edges.

Provision of efficient storm water control to prevent erosion of steep slopes and roadways and elsewhere where required

Scarifying of all internal access roads

Covering excavation areas, maneuvering areas and roads with top soil and allowing these areas to re-vegetate naturally

The goal of rehabilitation with respect to the area where prospecting will take place is to leave the area level and even, and in a natural state containing no foreign debris or other materials.

All scrap and other foreign materials will be removed from the area and disposed of as in the case of other refuse, whether these accrue directly from the mining operation or are brought on to the site.

Removal of these materials shall be done on a continuous basis and not only at the start of rehabilitation.

The small amount of overburden from the trenches will be back filled into the excavation and covered with topsoil. The area will be profiled to blend in with the topography of the surrounding environment.

The proposed end-state of the area was consulted with interested and affected parties in terms of Regulation 52(2)(g) (App. 4).

C 10 CLOSURE

Regulations 56 to 62 outline the entire process of mine closure, and these are copied in Section F of this document, both as a guide to applicants on the process to be followed for mine closure, and also to address the legal responsibility of the applicant with regard to the proper closure of his operation. In terms of Section 37 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), the holder of a permit is liable for any and all environmental damage or degradation emanating from his operation, until a closure certificate is issued in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

E UNDERTAKING:

I Sundil Ramluggan duly authorized thereto by TipuLor (Pty) Ltd, the applicant for a prospecting right hereby declare that the above information is true, complete and correct. I undertake to implement the measures as described in Sections C6.8, F and G hereof. I understand that this undertaking is legally binding and that failure to give effect hereto will render me 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). I am also aware that the Regional Manager may, at any time but after consultation with me, make such changes to this plan as he may deem necessary.

Signed on this 25th day of October 2010 at Midrand, Johannesburg

.....

Sundil Ramluggan
TipuLor (Pty) Ltd

F. ENVIRONMENTAL MANAGEMENT PLAN:

INTRODUCTION

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

F 1 GENERAL REQUIREMENTS

F 1.1 MAPPING AND SETTING OUT

F 1.1.1 LAYOUT PLAN

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

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

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

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

F 1.1.2 DEMARCATING THE PROSPECTING AREA

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

- The topsoil removed, shall be stored in a bund wall on the high ground side of the prospecting area outside the 1:50 flood level within the boundaries of the prospecting area.
- Topsoil shall be kept separate from overburden and shall not be used for building or maintenance of access roads.
- The topsoil stored in the bund wall shall be adequately protected from being blown away or being eroded.

F 2.2 ACCESS TO THE SITE

F 2.2.1 Establishing access roads on the site

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

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

F 2.2.2 Maintenance of access roads

- In the case of dual or multiple use of access roads by other users, arrangements for multiple responsibility must be made with the other users. If not, the maintenance of access roads will be the responsibility of the holder of the prospecting permit.
- 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.

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

F 2.3.3 Rehabilitation of the office/camp site

- On completion of operations, all buildings, structures or objects on the camp/office site shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), which states:

  (1) When a prospecting right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any prospecting or mining operation comes to an end, the holder of any such right or permit may not demolish or remove any building, structure, object -

  (a) which may not be demolished in terms of any other law;
  (b) which has been identified in writing by the Minister for purposes of this section; or
  (c) which is to be retained in terms of an agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Minister in writing.

  (2) The provision of subsection (1) does not apply to bona fide mining equipment which may be removed

F 2.4.3 Waste disposal

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

F 2.4.4 Rehabilitation of vehicle maintenance yard and secured storage's areas

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

F 3 OPERATING PROCEDURES IN THE PROSPECTING AREA

F 3.1 Limitations on prospecting

- The prospecting for precious stones shall take place only within the approved demarcated prospecting or mining area.
- Prospecting may be limited to the areas indicated by the Regional Manager on assessment of the application.
- The holder of the prospecting permit 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.

mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

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

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

- The goal of rehabilitation with respect to the area where prospecting has taken place in the river-bed is to leave the area level and even, and in a natural state containing no foreign debris or other materials and to ensure the hydrological integrity of the river by not attenuating or diverting any of the natural flow.
- All scrap and other foreign materials will be removed from the bed of the river and disposed of as in the case of other refuse (see section F 2.3.2 above), whether these accrue directly from the 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 prospecting.
- An effective control program for the eradication of invader species and other exotic plants, shall be instituted on a regular basis over the entire prospecting area under the control of the holder of the prospecting permit, both during 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 storm water management, erosion and sediment control and waste management. Copies of these guidelines can be obtained from the regional office of DME or DWAF.

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

F 3.4 PROCESSING AREAS AND WASTE PILES (DUMPS)

F 3.4.1 Establishing processing areas and waste piles

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

F 3.4.2 Rehabilitation of processing areas

- Coarse natural material used for the construction of ramps must be removed and dumped into the excavations.
- On completion of 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 prospecting operations. The construction, care and maintenance of tailings dams have been regulated and the relevant regulation is copied herwith , both for your information and as a guideline to the commisioning, management, operation, closing and aftercare of a tailings deposition facility.

(e) *A risk analysis must be carried out and documented on all high hazard residue stockpiles and deposits.*

(f) *The environmental classification of residue stockpiles and deposits must be undertaken on the basis of –*

- *(i) the characteritics of the residue;*
- *(ii) the location and dimensions of the deposit (height, surface area);*
- *(iii) the importance and vulnerability of the environmental components that are at risk; and*
- *(iv) the spatial extent, duration and intensity of potential impacts.*

(g) *An assessment of the environmental impacts shall be done on all environmental components which are significantly affected.*

(h) *The assessment of impacts and analyses of risks shall form part of the environmental assessment and management programme.*

(4) *Site selection and investigation:*

(a) *The process of investigation and selection of a site must entail -*

- *(i) the identification of a sufficient number of possible candidate sites to ensure adequate consideration of alternative sites;*
- *(ii) qualitative evaluation and ranking of all alternative sites;*
- *(iii) qualitative investigation of the top ranking sites to review the ranking done in (ii);*
- *(iv) a feasibility study to be carried out on the highest ranking site(s), involving -*
  - *(aa) a prelimenary 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.*

(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 unauthorized 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 program 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 program 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, hydro-geological and geo-chemical 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 were 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.*

F 3.6 FINAL REHABILITATION

- All infrastructure, equipment, plant, temporary housing and other items used during the prospecting period will be removed from the site (section 44 of the MPRDA)
- Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the prospecting area and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on the site.
- Final rehabilitation shall be completed within a period specified by the Regional Manager.

(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 program 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 program 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 program was compiled shall be carried out and added as a corrective action.

F 5 CLOSURE

When the holder of a prospecting right, mining permit or reconnaissance permission intends closing down his/her operations, an environmental risk report shall accompany the application for closure. The requirements of such a risk report is contained in Regulation 60 of the Regulations promulgated in terms of the Act and is quoted below :

F 5.1 ENVIRONMENTAL RISK REPORT

"An application for a closure certificate must be accompanied by an environmental risk report which must include-

(a) *the undertaking of a screening level environmental risk assessment where-*

(i) *all possible environmental risks are identified, including those which appear to be insignificant;*

(ii) *the process is based on the input from existing data;*

(iii) *the issues that are considered are qualitatively ranked as –*

(aa) *a potential significant risk; and/or*

(bb) *a uncertain risk; and/or*

(cc) *an insignificant risk.*

(b) *the undertaking of a second level risk assessment on issues classified as potential significant risks where-*

(i) *appropriate sampling, data collection and monitoring be carried out;*

(ii) *more realistic assumptions and actual measurements be made; and*

(iii) *a more quantitative risk assessment is undertaken, again classifying issues as posing a potential significant risk or insignificant risk.*

(c) *assessing whether issues classified as posing potential significant risks are acceptable without further mitigation;*

(d) *issues classified as uncertain risks be re-evaluated and re-classified as either posing potential significant risks or insignificant risks;*

G. SPECIFIC ADDITIONAL REQUIREMENTS DETERMINED BY THE REGIONAL MANAGER.

Officials in regional offices may use the following matrix to determine the necessity for additional objectives to be included in this Section of the document:

POTENTIAL ENVIRONMENTAL IMPACTS OF PROSPECTING										
Activity	Disturbance					Pollution				Visual
	Landform	Soil	Flora	Fauna	Heritage	Land	Water	Air	Noise	
Mining										
Access										
Topsoil removal										
Overburden removal										
Mineral Extraction										
Tailings disposal										
Water Abstraction										
Pipeline route										
Transport										
Accommodation										
Waste Disposal										
Electricity										
Hydrocarbon storage										
Workforce										

Please indicate VL, L, M, H, and VH for Very Low, Low, Medium, high and Very High in each column to determine the main area and severity of impact.

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.
Performance assessments and rehabilitation fund updates will be done annually.
Layout plans will be updated before commencing with invasive prospecting with the position of the drilling traverses and trenches together with an update of the rehabilitation fund estimate.

H. UNDERTAKING

I **Sundil Ramluggan** on behalf of **TipuLor (Pty) Ltd,** have studied and understand the contents of this document in it's entirety and hereby duly undertake to adhere to the conditions as set out therein including the amendment(s) agreed to by the Regional Manager in Section G and approved on .....

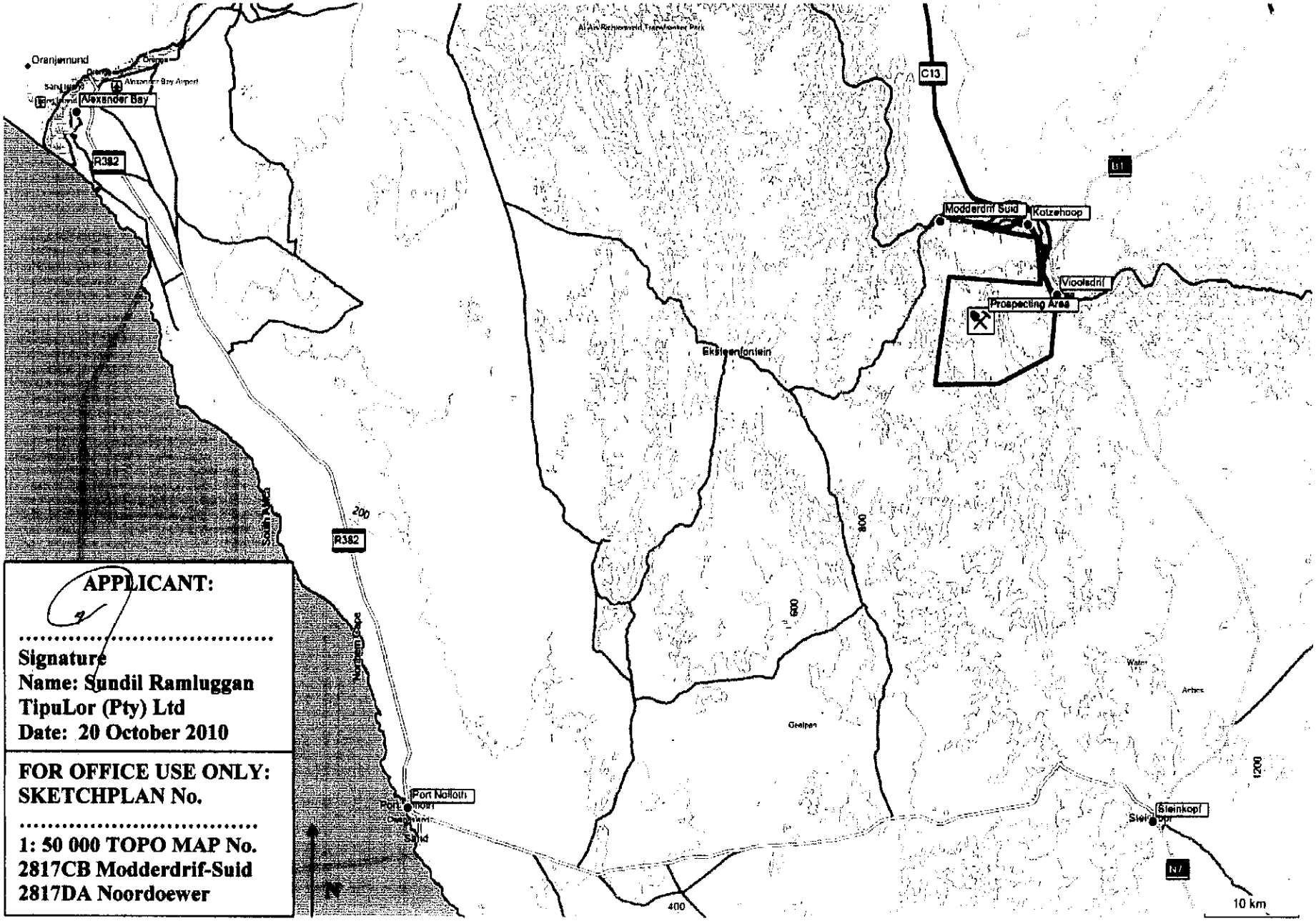
Signed on this 25th day of October 2010 at Midrand, Johannesburg

.....

Sundil Ramluggan
TipuLor (Pty) Ltd

APPENDIX 1a Locality plan

contemplated in regulation 2(2) read with regulation 2(3) of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 30 of 2002)



APPLICANT:

.....

Signature
Name: Sundil Ramluggan
TipuLor (Pty) Ltd
Date: 20 October 2010

FOR OFFICE USE ONLY:
SKETCHPLAN No.

.....

1: 50 000 TOPO MAP No.
2817CB Modderdrif-Suid
2817DA Noordoewer

APPENDIX 1c Layout plan inset

contemplated in regulation 2(2) read with regulation 2(3) of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 30 of 2002)

APPLICANT:

.....

Signature
Name: Sundil Ramluggan
TipuLor (Pty) Ltd
Date: 20 October 2010

PROSPECTING WORK PROGRAMME

In terms of Regulation 7(1) of the Regulations under the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)

a) FULL PARTICULARS OF THE APPLICANT

b) PLAN CONTEMPLATED IN REGULATION 2(2), SHOWING THE LAND TO WHICH THE APPLICATION RELATES

c) REGISTERED DESCRIPTION OF THE LAND TO WHICH THE APPLICATION RELATES SPECIFYING THE FARM NAME AND SUBDIVISION

d) THE MINERAL OR MINERALS TO BE PROSPECTED FOR

e) A GEOLOGICAL DESCRIPTION OF THE LAND SUBSTANTIATED BY A GEOLOGICAL MAP

f) A DESCRIPTION OF HOW THE MINERAL RESOURCE AND MINERAL DISTRIBUTION OF THE PROSPECTING AREA WILL BE DETERMINED

g) A DESCRIPTION OF THE PROSPECTING METHOD OR METHODS TO BE IMPLEMENTED

h) ALL PLANNED PROSPECTING ACTIVITIES MUST BE CONDUCTED IN PHASES AND WITHIN SPECIFIC TIMEFRAMES

i) TECHNICAL DATA DETAILING THE PROSPECTING METHOD OR METHODS TO BE IMPLEMENTED AND THE TIME REQUIRED FOR EACH PHASE OF THE PROPOSED PROSPECTING OPERATION

k) A COST ESTIMATE OF THE EXPENDITURE TO BE INCURRED FOR EACH PHASE OF THE PROPOSED PROSPECTING OPERATION

j) DETAILS WITH DOCUMENTARY PROOF OF-
   (i) The applicant's technical ability or access thereto to conduct the proposed prospecting operation
   (ii) A budget and documentary proof of the applicant's financial ability or access thereto

m) AN UNDERTAKING, SIGNED BY THE APPLICANT, TO ADHERE TO THE PROPOSALS AS SET OUT IN THE PROSPECTING WORK PROGRAMME

Regulation 7(1)(d): THE MINERAL OR MINERALS TO BE PROSPECTED FOR.

The mineral for which the right is required is: **Limestone.**

The period required to conduct the proposed prospecting operation is: **5 (five) years.**

Regulation 7(1)(e): A GEOLOGICAL DESCRIPTION OF THE LAND SUBSTANTIATED BY A GEOLOGICAL MAP

(Geological map attached in the Regulation 2(2) sketch plans – see Regulation 7(1)(b))

Limestone occurrences in Nababeep District were associated with Kwanous Subgroup of Nababeep Group and Gilfberg Group of Gariep Supergroup. Nababeep Group occurs in Nababeep Basin in southern Namaqualand and separated from Witspub Basin by Kamieskroon Ridge. In Kwanous Subgroup, limestone and dolomite occurs in Hoedberg and Grootriet Formations. The formations consist of carbonates and calcareous shale overlain by an upward coarsening succession of marine mudstone, siltstone, sandstone and conglomerates.

Gilfberg Group of Garriep Supergroup underlies or has been thrust over Vanrhysdorp Group between Nababeep and Kobe Valley.The group consist of three limestone, marble and dolomite bearing formations namely Bloupoort, Aties and Widouw. The carbonates in these formations are also associated with pyritic and graphtic schist, phyllite, ferruginous chert, quartzite, greywacke etc. All exposures of Gilfberg Group (outlier) occur southwest of a line corresponding to a major fault zone traversing the Namaqualand Basement and Nababeep Group in northwestern direction.

Limestone in this vicinity were investigated and were found to be similar with approximately 75 % $CaCO_3$, with further 98.7% $CaCO_3$, 0.4%, MgO, 0.6% SiO2, 0.13% Al_2O_3 and 0.04% Fe_2O_3.The resource has been estimated to be over 100 million tones. The resource was not exploited because the limestone decrepitates.

Regulation 7(1)(f): A DESCRIPTION OF HOW THE MINERAL RESOURCE AND MINERAL DISTRIBUTION OF THE PROSPECTING AREA WILL BE DETERMINED

The following **non-invasive activities** are planned for proposed prospecting program:

- Desktop: data collection, literature research and geological interpretation
- Geological mapping
- Ground magnetometer

Several existing tracks exist on the site and these will be used wherever possible. The Farmer's access road will be utilized in most cases, so no envisaged ground disturbance is planned or foreseen.

Regulation 7(1)(h): ALL PLANNED PROSPECTING ACTIVITIES MUST BE CONDUCTED IN PHASES AND WITHIN SPECIFIC TIMEFRAMES

AND

Regulation 7(1)(i): TECHNICAL DATA DETAILING THE PROSPECTING METHOD OR METHODS TO BE IMPLEMENTED AND THE TIME REQUIRED FOR EACH PHASE OF THE PROPOSED PROSPECTING OPERATION

AND

Regulation 7(1)(k): A COST ESTIMATE OF THE EXPENDITURE TO BE INCURRED FOR EACH PHASE OF THE PROPOSED PROSPECTING OPERATION

Year	Phase	Exploration Activity	Duration
Year 1	Phase 1: Project examination	• Compilation of all available geological, remote sensing, and exploration data • Site preparation – accessibility, water supply, set-up of field camp, consultation with land-owners, general infrastructure and logistics, etc. • Field mapping	6 months
Year 1	Phase 2: Reconnaissance drilling	• Initial percussion drilling of average of two boreholes per farm to test for the presence of the limestone zone (37 percussion holes, average depth 30m at 2km grid spacing) • Logging and sampling of the boreholes • Consolidation of results and report writing • Assessment and target selection for the next phase	6 months
Year 2	Phase 3: Outline drilling	• Wide-spaced drilling and sampling to determine the distribution and lateral extent of mineralization established in the previous drilling phase (49 percussion holes average depth 30 at > 1km spacing) • Detailed geological logging and sampling of the drill core. • Analyses of the drill core • Construction of preliminary geological model. • Consolidation of results and report writing Selection of targets for next stage	12 months
Year 3	Phase 4: Infill drilling	• Wider spaced drilling over the rest of the area (29 percussion holes average depth of 30m at ~500 km spacing)	12 months

PROSPECTING PROGRAMME: BREAKDOWN OF ANTICIPATED EXPENDITURE FOR YEARS 1 TO 5

YEAR 1 (Phases 1 & 2)

Activity	Explanation	Costs
Data study	Data collection, compilation and assessment	R 10 000.00
Percussion drilling	37 percussion boreholes, average 30m deep (1110m total @ R250/m)	R277 500.00
Site Preparation &Access		R29 600.00
Assay costs	555 chip samples, @ R300/sample	R 166 500.00
Environmental Mngt& Rehab		R3500.00
Accomodation & Storage		R 4500.00
Office, stationery, printing & draughting		R 4000.00
Total		**R 495 600.00**

YEAR 2 (Phase 3)

Activity	Explanation	Costs
Drilling Access	Includes possible bulldozer hire	R29 400.00
Drilling	49 percussion holes, average 30m deep = 1470m @ R250/m	R 367 500.00
Assay costs	735 samples @ R300/sample	R 220 500.00
Environmental Mng &Rehab		R4500
Accommodation and storage	Core storage	R 6000.00
Office, stationery, printing & draughting		R5 000.00
Total		**R632 900.00**

The budget for Year 2 will depend on (i) the results from the work done during Year 1 and its impact on the project, and (ii) external financial factors such as the exchange rate, interest rate, and inflation. By extension, the work done during Year 2 will have an impact on the programme for Year 3. The proposed budget and programme as given here may differ significantly from the actual work executed, given the high degree of technical and financial uncertainty inherent in the prospecting process, as well as on results of prospecting.

YEAR 3 (Phase 3)

Activity	Explanation	Costs
Site Preparation & Access	Includes possible bulldozer hire	R11 600.00
Drilling	29holes, percussion hole, average 30m deep = 870 @ R250/m	R 217 500.00
Assay costs	435 samples @ R300/sample	R 108 750.00
Geotechnical Testing		R 50 000.00
Environmental Mngnt &Rehab		R2500.00
Metallurgical & Plant test		R100 000.00
Accommodation and storage	Core storage	R 3000.00
Office, stationery, printing & draughting		R4 000.00
Total		**R 519 100.00**

The figure given above should be seen as a maximum expected expenditure, as it is predicated on complete success for the program.

Regulation 7(1)(j): DETAILS WITH DOCUMENTARY PROOF OF-

(i) The applicant's technical ability or access

Osho group is conducting prospecting in many SADC countries (Mozambique, Malawi, Madagascar and Namibia) and submits that it has at all times carried out its operations to the highest standards both in the prospecting operations and the mitigation and rehabilitation of any environmental impacts. TipuLor takes all reasonably practical steps to ensure that its employees are properly trained and inducted.

In addition, prospecting operations are monitored by qualified company employees including drill crews and exploration geologists and other experts/professionals all of whom have the necessary practical experience as well as appropriate academic qualifications and/or are registered with respective professional bodies. The **CVs** professional affiliations and registration numbers of the various technical staff working on this Project are attached.

SKILLS REQUIRED	How Provided
Prospecting	Inhouse Geologists
Mapping	Inhouse Geologists
Sampling	Inhouse Geologists
Modelling	Inhouse Geologists
Drilling	Inhouse drill-rigs
Environmental	uKhozi Environmentalists

The company has experienced prospecting contractors to carry out its prospecting operations.
The Osho Group have purchased 10 of their own **drilling rigs** from Atlas Copco at a total cost of just under US$4-million (see below). We therefore have capable and experienced drilling crews to carry out the prospecting work as soon as possible.
These drilling rigs can be deployed to the Northern-Cape Province in order to carry out the prospecting on the licenses issued.
Prior to commencement of prospecting work, we undertake to do a full risk assessment.

(ii) A budget and documentary proof of the applicant's financial ability or access thereto, which may include but is not limited to the following:

Osho ventures FZCO based in Dubai is the majority stakeholder of TipuLor (Pty) Ltd., which will be funding the exploration and other phases of this project from its internal accruals.

Please find attached (see below) the letter from our Bankers indicating the **funds** kept aside for this project in the Northern-Cape Province of the Republic of South Africa.

APPENDIX 3: ESTIMATED REHABILITATION COST

The area will be rehabilitated with the original land use namely small stock farming in mind and the productivity of the area after closure will be the same as before prospecting operations started.
Rehabilitation cost was estimated with the proposed end-state in mind and was calculated according to the categories listed in section F of the EMP. Although the applicant have his own equipment the tariffs for equipment was based on local hiring tariffs in Springbok.

Rehabilitation of access roads

No access roads will be constructed by the holder of the permit only existing farm roads will be used. The rehabilitation of drilling treveses will be adressed as part of final rehabilitation.

Rehabilitation of the office/camp site

No infrastructure will be constructed on the prospecting area and infrastructure in Vioolsdrift and or Steinkopf will be used.

Rehabilitation of vehicle maintenance yard and secured storages areas

No maintenance yard will be constructed the infrastructure in Vioolsdrift and or Steinkoph will be used.

Rehabilitation of excavation areas

Drill holes

The goal of rehabilitation with respect to the area where drilling has taken place is to leave the drill pads level and even containing no foreign debris or other materials.
All scrap and other foreign materials will be removed from the site and disposed of as in the case of other refuse whether these accrue directly from the prospecting operation or are brought on to the site from outside.
All drill sumps will be back filled. Once the overburden have been profiled the topsoil previously stored if any, will be returned and the total area will be profiled with acceptable contours and erosion control measures.
This estimation is based on 40 drill pads. The excact numer of traveses and holes will only be known after completion of initial non-invasive prospecting and the layout plans and rehab estimate will be updated before commencing with drilling.

Extent:	40 holes
Duration of rehabilitation: 2 holes per day	20 days.
Equipment require:	
Manual labor @ R1000.00/day for backfilling and profiling	R 20 000.00
Cost of rehabilitation:	**R20 000.00**

Pitting/Trenching

The goal of rehabilitation with respect to excavated area is to leave the area level and even containing no foreign debris or other materials.
All scrap and other foreign materials will be removed from the site and disposed of as in the case of other refuse whether these accrue directly from the prospecting operation or are brought on to the site from outside.