



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

FINAL SCOPING REPORT

PROSPECTING RIGHT APPLICATION OF DIAMONDS ALLUVIAL & DIAMONDS GENERAL ON PORTION 3 OF THE FARM SAND DRIFT 101, REGISTRATION DIVISION HERBERT RD; NORTHERN CAPE PROVINCE

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT	BONDEO 140 CC
COMPILED BY	MILNEX 189 CC
TEL NO	(018) 011 1925
FAX NO	087 231 7021
POSTAL ADDRESS:	P.O. Box 1086, Schweizer-Reneke, 2780
PHYSICAL ADDRESS:	4 Botha Street, Schweizer-Reneke, 2780
FILE REFERENCE NUMBER SAMRAD:	NC30/5/1/1/2/11825PR

CLAUSE

This report has been compiled by Milnex 189 CC, using information provided by Bondeo CC the client as well as third parties, which information has been presumed to be correct. While Milnex 189 CC have made every endeavour to supply accurate information, and exercised all care, skill and diligence in the drafting of this report, errors and omissions may occur. Accordingly, Milnex 189 CC does not warrant the accuracy or completeness of the materials in this report. Milnex 189 CC does not accept any liability for any loss or damage which may directly or indirectly result from any advice, opinion, information, representation or omission, whether negligent or otherwise, contained in this report. Milnex 189 CC does not accept any liability for any loss or damage, whether direct, indirect or consequential, arising out of circumstances beyond the control of Milnex 189 CC, including the use and interpretation of this report by the client, its officials or their representatives or agents. This document contains information proprietary to Milnex 189 CC and as such should be treated as confidential unless specifically identified as a public document by law. Milnex 189 CC owns all copyright and all other intellectual property rights in this report. The document may not be copied, reproduced in whole or in part, or used for any manner without prior written consent from Milnex 189 CC. Copyright is specifically reserved in terms of the Copyright Act 98 of 1987 including amendments thereto. By viewing this disclaimer and by accepting this document, you acknowledge that you have read and accepted these Terms of Use and undertake to keep the information contained herein confidential and not to do any act or allow any act which is in breach of these Terms of Use.

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE SCOPING PROCESS

- 1) The objective of the scoping process is to, through a consultative process—
 - (a) identify the relevant policies and legislation relevant to the activity;
 - (b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
 - (c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
 - (d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
 - (e) identify the key issues to be addressed in the assessment phase;
 - (f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
 - (g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

SCOPING REPORT

2) Contact Person and correspondence address

a) Details of:

i) The EAP who prepared the report

Name of Practitioner: Danie Labuschagne

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

e-mail address: danie@milnex-sa.co.za

Name of Practitioner: Percy Sehaole

Tel No.: (018) 011 1925

Fax No. : (053) 963 2009

e-mail address: percy@milnex-sa.co.za

ii) Expertise of the EAP.

(1) The qualifications of the EAP

(With evidence attached as **Appendix 1**).

Danie Labuschagne holds a Master's Degree in Environmental Management and Geography (refer to **Appendix 1**)

Percy Sehaole holds a Master's Degree in Environmental Science (refer to **Appendix 1**)

(2) Summary of the EAP's past experience.

(Attach the EAP's curriculum vitae as **Appendix 2**)

Milnex 189 CC was contracted by Bondeo 140 CC as the independent environmental consultant to undertake the Scoping and EIA process for a prospecting right for the prospecting of diamonds alluvial & diamonds general on Portion 3 of the farm Sand Drift 101, Registration Division Herbert RD; Northern Cape Province. Milnex 189 CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Milnex 189 CC is a specialist environmental consultancy with extensive experience in the mining industry which provides a holistic environmental management service, including environmental assessment and planning to ensure compliance with relevant environmental legislation. Milnex 189 CC benefits from the pooled resources, diverse skills and experience in the environmental and mining field held by its team that has been actively involved in undertaking environmental studies for a wide variety of mining related projects throughout South Africa. The Milnex 189 CC team has considerable experience in environmental impact assessment and environmental management, especially in the mining industry.

Danie Labuschagne & Percy Sehaole have experience consulting in the environmental field. Their key focus is on environmental assessment, advice and management and ensuring compliance to legislation and guidelines. They are currently involved in undertaking EIAs for several projects across the country (refer to **Appendix 2** for CV)

b) Description of the property.

Farm Name:	1. Portion 3 of the farm Sand Drift 101
Application area (Ha)	2136.9029 ha
Magisterial district:	Herbert RD
Distance and direction from nearest town	The property is located approximately 56km South West of Kimberley in the Northern Cape Province.
21 digit Surveyor General Code for each farm portion	C0320000000010100003

c) Locality map

(show nearest town, scale not smaller than 1:250000 attached as **Appendix 3**).

A Locality map is attached in **Appendix 3** and on figure 1 below.

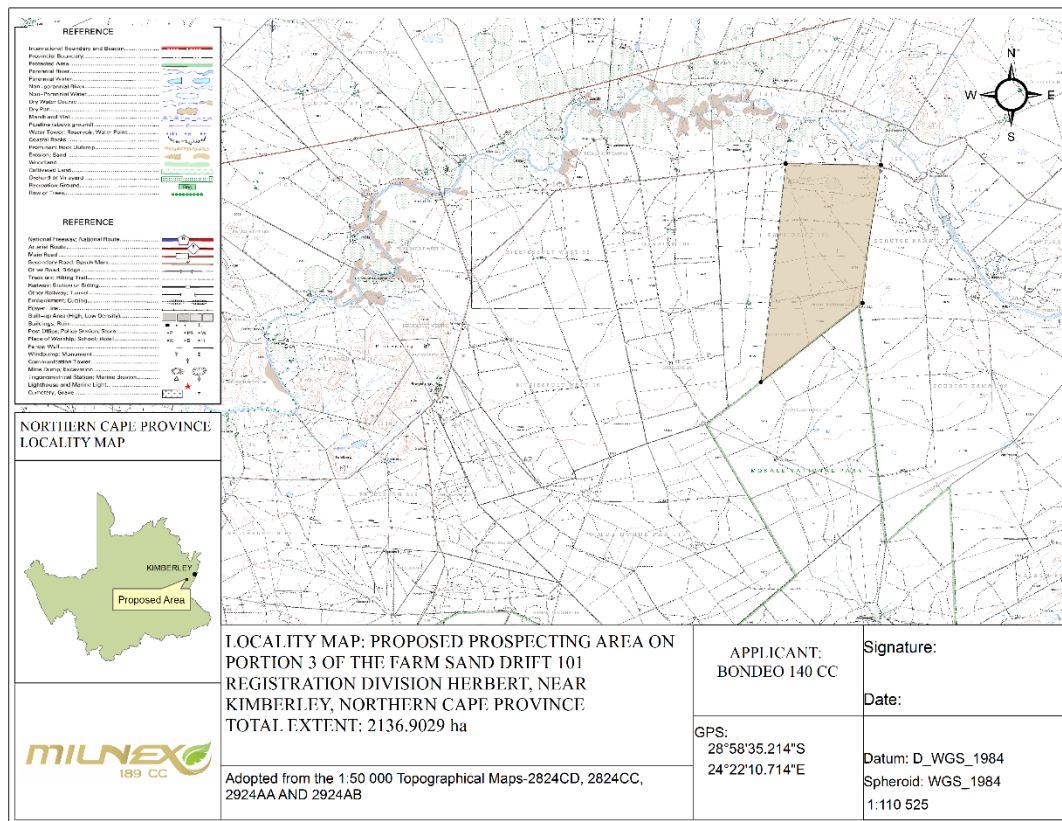


Figure 1: Locality Map

Farms Co-ordinates:

Farms	Latitude	Longitude
Portion 3 of the farm Sand Drift 101	28°57'1.69"S	24°23'29.56"E
	28°57'0.06"S	24°21'32.19"E
	29° 1'31.28"S	24°21'1.25"E
	28°59'53.05"S	24°23'7.09"E

d) Description of the scope of the proposed overall activity.

i) Listed and specified activities

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site and attach as **Appendix 4**

Refer to Site Plan included within **Appendix 4**.

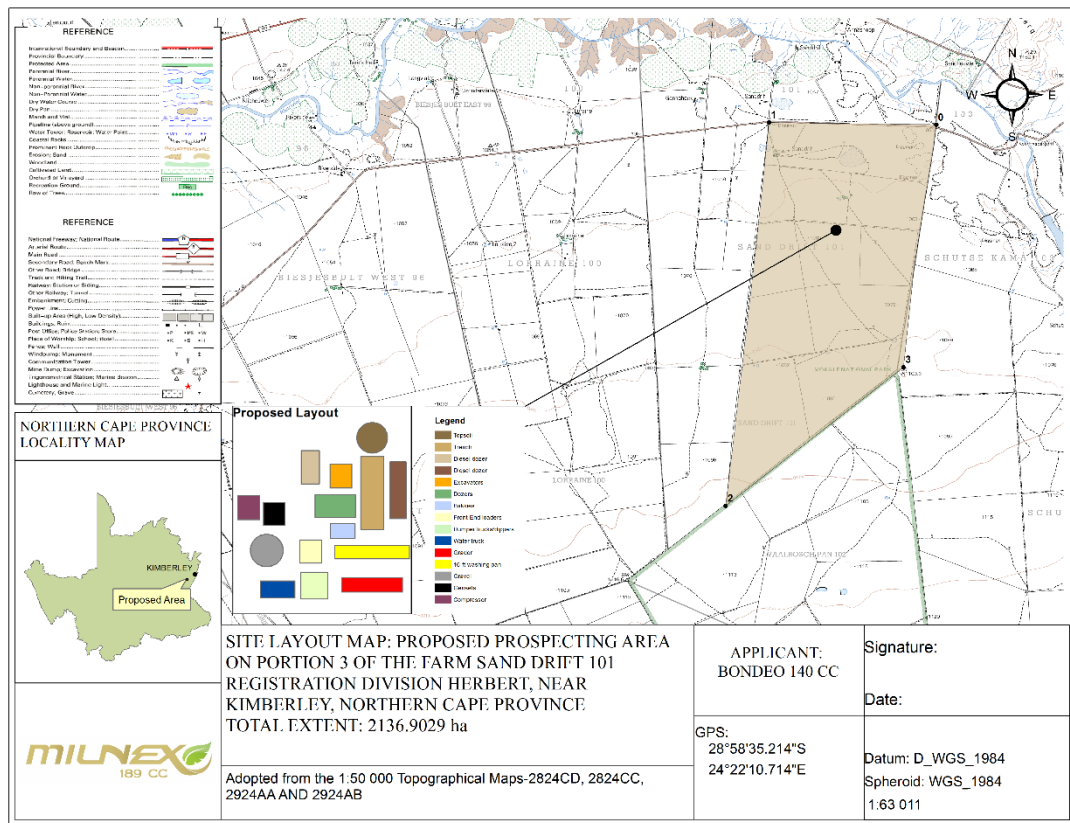


Figure 2: Site Plan

NAME OF ACTIVITY (All activities including activities not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)/NOT LISTED
Clearance of indigenous vegetation	2136.9029 hectares - Only the areas where prospecting takes place, will be cleared. Concurrent backfilling will take place in order to rehabilitate.	X	GNR. 984
Office and Workshop	50m ²	-	-
Roads	+- 10Km	-	GNR. 983
Storage of diesel in bunded tanks	More than 80 000 litres	X	GNR. 983
Stockpiling op topsoil	2136.9029 ha – 3m x 2m x 5m pit (200 pits), 100m x 30m x 8m trench (50 trenches)	-	-
Prospecting of Diamond Alluvial - Excavations	2136.9029 ha – 3m x 2m x 5m pit (200 pits), 100m x 30m x 8m trench (50 trenches)	X	GNR. 984
Processing Plant	16 feet washing pan – 810 00 tons to be washed	X	-

Listing Notices:

<p>Description of the overall activity. (Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)</p>	<p>1. Listing Notice GNR 984, Activity 15: "The clearance of an area of 20 hectares or more, of indigenous vegetation." – Random indigenous vegetation clearance of over a 2136.9029 hectare area.</p> <p>2. Listing Notice GNR 984, Activity 19: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resource4s Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section</p>
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	<p><i>106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)” – Prospecting right with bulk samples for the mining of Diamond Alluvial and Diamond General, including associated infrastructure, structure and earthworks.</i></p> <p>3. Listing Notice GNR 984, Activity 21: <i>“Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.”</i></p> <p>4. Listing Notice GNR 983, Activity 14: <i>“The development of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic meters or more but not exceeding 500 cubic metres.”</i> The storage of diesel in banded diesel tanks, exceeding 80 000 litres.</p> <p>5. Listing Notice GNR 983, Activity 24(ii): <i>“The development of a road with a reserve wider than 13.5 metres, or where no reserve exists where the road is wider than 8 metres.”</i> - The development of 10m wide road, with no road reserve.”</p>
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ii) **Description of the activities to be undertaken**

(Describe Methodology or technology to be employed, and for a linear activity, a description of the route of the activity)

Phase 1 – Site Visit

A site visit will be conducted within 3 months after execution of the Prospecting Right. It is envisaged that the information will be obtained from the site visit to do the desktop studies and other prospecting activities.

Phase 2 – Desktop studies

Desktop studies will be undertaken after the site investigation has been done to determine the target areas including the identification of any infrastructure to be built and any potential problems that may need to be addressed.

Phase 3 – Pitting

The information obtained from the desktop studies will be used to draw up a pitting map. The location and GPS coordinates of where pits will be dug, will be indicated on this map

(pitting location map). Pits will then be dug by an excavator on these mapped coordinated points. If gravel is found the applicant will determine the composition and quality of the gravel. It is envisaged that the pits will determine the location and intersection of mineralization.

It is envisaged that 200 pits will be dug. It may be less depending on results.

2136.9029 ha – 3m x 2m x 5m pit (200 pits). It is planned that only 40 pits will be excavated in the first year, but it may be more if the process is quicker than planned for. It should be kept in mind that no more than 200 pits will be excavated.

The total area to be disturbed a year will be- 40 pits x (3m x2m) = 0.024Ha per year

Phase 4 – Trenches

The applicant will proceed with this way of prospecting by means of the open cast / trenching method, simultaneously or after pitting depending on the information obtained from the earlier work done. The trenches will be dug to remove and to wash the gravel. It will be washed by 1 x 16 feet washing pan to determine diamond proceeds per 100 ton of gravel.

100m x 30m x 8m trench (50 trenches). It is planned that only 10 trenches will be excavated in the first year, but it may be more if the process is quicker than planned for. It should be kept in mind that no more than 50 trenches will be excavated.

The total area to be disturbed a year will be- 10 trenches x (100m x30m) = 3 Ha per year. No more than 3.024ha will be left as un-rehabilitated in two years. Rehabilitation will be done concurrently.

Phase 5 – Consolidation and interpretation

All data will be consolidated and processed to determine the diamond bearing resource on the property. This will be a continuous process throughout the prospecting work. Each phase of prospecting will be followed by desktop studies involving interpretation and modeling of all data gathered and how the applicant will proceed with the work program in terms of activity, quantity, resources expenditures and duration. A pre-feasibility study will be done to determine the preliminary economic assessment of the resource and to determine whether additional evaluation of the deposit will be warranted to increase confidence in the resource estimation. Prospecting work will be conducted by a multi-disciplinary team to determine whether the resource can be viable exploited and if the results can support an application for a mining right.

Phase 5 – Rehabilitation and Closure

- Remove all prospecting related infrastructure
- Return tailings and overburden to the excavation in order to fill up the excavation.
- Place topsoil on top of the backfilled excavation.
- Rehabilitate disturbed areas appropriately

e) **Policy and Legislative Context**

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);	REFERENCE WHERE APPLIED
The Constitution of South Africa (Act No. 108 of 1996)	-
The National Environmental Management Act (Act No. 107 of 1998)	S24(1) of NEMA S28(1) of NEMA
The National Water Act (Act No. 36 of 1998)	S21 (a)(b) of NWA
Management: Air Quality Act (Act No. 39 of 2004)	S21
The National Heritage Resources Act (Act No. 25 of 1999)	-
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	-
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	-
National Infrastructure Plan	-
Pixley Ka Seme District Municipality Integrated Development Plan (IDP)	-
Siyancuma Local Municipality Integrated Development Plan (IDP) Review	-

f) **Need and desirability of the proposed activities.**

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

Prospecting rights and mining permits have been applied for all around the proposed site, and the outcome of that studies suggest the possibility of encountering further diamond deposits.

The Northern Cape Province is an important supplier of rough diamonds to the international market and is a large corner stone of the South African economy.

g) **Period for which the environmental authorisation is required.**

The environmental authorisation is required for a minimum period of 10 years.

h) **Description of the process followed to reach the proposed preferred site.**

NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, the comparison of that plan with the plan of environmental features and current land uses, the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout as a result.

Each of the phases are dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond bulk sampling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, the overall prospecting area is presented in **Appendix 3**.

The stakeholder consultation phase has not been completed at this time, and therefore the comments raised by I&APs have not been incorporated in this section. This will be updated as part of the final report.

i) Details of all alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

(a) The property on which or location where it is proposed to undertake the activity

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter further Diamond Reserves on the farm Sand Drift 101 were identified.

Furthermore, no other properties have been secured by the applicant, Bondeo 140 CC.

(b) The type of activity to be undertaken

In terms of the technologies proposed, these have been chosen based on long term success in terms of their prospecting history. The prospecting activities proposed in the Prospecting Work Programme is dependent on the preceding phase, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

(c) The design or layout of the activity

The location of the activities will be determined based on the location of the prospecting activities, which will only be determined during phase 1 and 2 of the Prospecting Work Programme (see **Appendix 9** for the Programme). The proposed area consist of diggings & 1 non-perennial water (pan). Where applicable a Water Use License Application will be launched for conducting prospecting operations. All infrastructure will be temporary and/or mobile.

(d) The technology to be used in the activity

In terms of the technologies proposed, these have been chosen based on the long term success of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme (**Appendix 9**) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

The preferred technology for the proposed mining activity, will be to remove the diamond bearing gravel with an excavator, depositing it in the 10 – 18 feet rotary pan(s) to be washed and sorted. Please find the Prospecting Work Programme attached as **Appendix 9**.

Pros & Cons of the alternative **Dense Media Separation (DMS)**

Advantages	Disadvantages
DMS plants is used mostly for kimberlite deposits	10 times more expensive than Rotary pan
	Water consumption is high
	Operating costs are expensive

In a Dense Media Separation (DMS) plant, powdered ferrosilicon (an alloy of iron and silicone) is suspended in water to form a fluid near the density of diamond (3.52 g/cm³), to which the diamond bearing material is added to begin the separation process of the heavier minerals from the lighter material. Additional separation of the denser material occurs by centrifuge in “cyclones” that swirl the mixture at low and high speeds, forcing the diamonds and other dense minerals to the walls and then out the bottom of the cyclone. Waste water rises at the center of the cyclones and is sucked out and screened to remove waste particles. The DMS process results in a concentrate that generally weighs less than one percent of the original material fed into the plant at the beginning of the process.

Pros & Cons of the alternative **Rotary Pan Plants**

Advantages	Disadvantages
More cost effective	The industry perception that Rotary Pan Plants yield poorer diamond recoveries
Readily available	
Generate more work opportunities	
Consume less water	
Rotary Pan Plants are most often used when mining alluvial deposits	

In a Rotary Pan plant, crushed ore, when mining kimberlite, or alluvial gravel and soil is mixed with water to create a liquid slurry called “puddle” which has a density in the 1.3 to 1.5 g/cm³ range. The mix is stirred in the pan by angled rotating “teeth”. The heavier minerals, or “concentrate”, settle to the bottom and are pushed toward an extraction point, while lighter waste remains suspended and overflows out of the centre of the pan as a separate stream of material. The concentrate, representing just a small percentage of the original kimberlite ore or alluvial gravels, is drawn off for final recovery of the diamonds.

Both methods are in actual fact used for bulk material reduction and require a further process for the final diamond recovery however, for this project the Rotary Pan will be used.

When it comes to dust suppression two main methods were considered, namely molasses stillage and the wetting (water) of roads. The table below provides a short summary of the advantages and disadvantages of each.

Water	Molasses stillage
More cost effective	Much more expensive
Could lead to the depleting of water resources	Requires less water

No damage (only if used excessively)	The product may be toxic to aquatic organisms. (As this product could have physical effects on aquatic organisms for e.g. floating, osmotic damage)
No harm to humans or animals(Only a high quantity will have harm to humans or animals)	Not Hazardous or toxic. Could cause irritation to eyes, skin or when ingested and inhaled.
Non-flammable	Non-flammable
Eye-wash fountains not needed	Eye-wash fountains in the work place are strongly recommended
	Working procedures should be designed to minimize worker exposure to this product.
Basic storing methods	Storing methods are a bit more complicated. Should be stored in a plastic, plastic lined or stainless steel, tight closed containers between 5 and 40 degrees Centigrade.

Considering the above mentioned information, water will be used for dust suppression purposes.

(e) The operational aspects of the activity

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage services are required.

The activities will commence with a site investigation and desktop studies, which will comprise of non-invasive techniques. This manner of survey will ensure that the applicant can clearly delineate areas which are suitable for further investigation and no unnecessary surface disturbance will be undertaken.

Based on the outcome of the desktop studies and site investigation, pits will be dug by an excavator for the purpose of soil sampling. If gravel is found, the applicant will determine the composition and quality of the gravel.

The applicant will proceed with this way of prospecting by means of the open cast/trenching method, simultaneously or after pitting depending on the information obtained from the earlier work done. The trenches will be dug to remove and wash the gravel. It will be washed by a washing pan to determine diamond proceeds per 100 tons of gravel.

All data will be consolidated and processed to determine the diamond bearing resources on the property. This will be a continuous process throughout the prospecting work programme.

No feasible alternatives to the pitting and trenching method currently exists. Impacts associated with the prospecting operations will be managed through the implementation of a management plan, developed as part of the application for authorisation.

(f) The option of not implementing the activity

The option of not approving the activities will result in a significant loss of valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

ii) Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

1. Advertisement and Notices

Newspaper advertisement

An advertisement will be placed in English in the local newspaper (Noordkaap newspaper) on the 22 June 2016 (see **Appendix 6**) notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with, and submit their comments to Milnex 189 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

Site notices

Site notices were placed on site in English on the 23 June 2016 to inform surrounding communities and immediately adjacent landowners of the proposed development. I&APs were given the opportunity to raise comments. Photographic evidence of the site notices is included in **Appendix 6**.

Direct notification and circulation of Scoping Report to identified I&APs

Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the Scoping Report via registered post on 17 June 2016 and were requested to submit comments by 18 July 2016. A copy of the report is also available at the Milnex offices, Schweizer-Reneke and Potchefstroom, from 7:30 – 17:00, Monday to Friday. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**. The consultees included:

- Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)
- The Department of Water Affairs and Forestry (DWAF)
- NC Department of Agriculture, forestry and fisheries (DAFF)
- Provincial Heritage Resources Agency (PHRA)- Northern Cape
- Department of Roads and Public Works (DRPW)
- Pixley Ka Seme District Municipality
- WESSA
- Municipal Manager: Siyancuma Local Municipality
- Ward Councilor Siyancuma Local Municipality
- South African Heritage Resources Agency (SAHRA)

It is expected from I&APs to provide their inputs and comments within 30 days after receipt of the notification or Scoping Report.

Direct notification of surrounding land owners and occupiers

Written notices and the availability of the Scoping Report are also provided to all surrounding land owners and occupiers on 17 June 2016. The surrounding land owners are given the opportunity to raise comments by 18 July 2016. For a list of surrounding land owners see **Appendix 6**.

1. Consultation

All I&AP's are invited to attend the public meeting. The Public Meeting is scheduled for the **13 July 2016 at 11:00am–12:00pm** on Portion 7 of the farm Sand Drift 101 at the farm house. Please indicate on the comments and response form if you wish to attend the Public Meeting. The coordinates and directions (figure1) of the public meeting follows below

Coordinates
28°56'45.07"S
24°21'27.72"E

Directions from Douglas

- Second gate.
- Drive out of Douglas on the R357 toward Kimberley for more or less 46km.
- Turn right at the Plooyburg sign (green board)
- Drive straight for more or less 11km and turn left.
- Drive straight for more of less 12.2km then turn left onto the farm.
- Drive for +/- 0.5km until you reach the farm house.



Directions from Douglas to the public meeting

The public meeting is an opportunity to share information regarding the proposed development and provide I&APs with an opportunity to raise any issues and provide comments.

The following key stakeholders and surrounding land owners are also directly informed of the public meeting via registered post 17 June 2016:

- Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)
- The Department of Water Affairs and Forestry (DWAf)
- NC Department of Agriculture, forestry and fisheries (DAFF)
- Provincial Heritage Resources Agency (PHRA)- Northern Cape
- Department of Roads and Public Works (DRPW)
- Pixley Ka Seme District Municipality
- WESSA
- Municipal Manager: Siyancuma Local Municipality
- Ward Councilor Siyancuma Local Municipality
- South African Heritage Resources Agency (SAHRA)
- Land Owner: Sand Drift Trust Mrs Johanna Maria Van Der Merwe
- Smith Familie Trust
- Sanddrift Trust
- Scholtz Schutsekama Trust
- Eskom Beherend Ltd
- On behalf of the republic of south Africa Department of Rural Development and Land Reform Northern Cape Manager: Cynthia Nkoane

Public meeting which was held on **the 13 July 2016 at 11:00am–12:00pm was attended by:**

Milnex Representative

Mr Danie Labuschagne

Mr. SJ Jansen van Rensburg

Land owners

Mr. & Mrs van der Merwe

Concerns were raised and are attached in the minutes of the meeting are attached in appendix 6.

3. Issues Raised by Interested and Affected Parties

When the comment period ends, comments received will be included in the comments and response table/form (See Appendix 6 for comments and response form).

iii) Summary of issues raised by I&APs

(Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties		Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issue and or response where incorporated
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.					
Organisation	Contact person				
Land Owner					
Sand drift 3/101	Sand Drift Trust Mrs Johanna Maria Van Der Merwe		Returned comments and response form dated 13/07/2016, states that he is afraid the activity will damage the veld, grass, bushes, and Camel thorn trees, as well as infrastructure such as gates, fences and the road. He also states that White-backed Vultures are present in the area. On the form he marked that he would like to receive project information by mail on CD in PDF format.	A CD was posted on the 18 July 2016 to Mrs Johanna Maria Van Der Merwe	Camel thorn & White-backed vultures page 24-25
Landowners or lawful occupiers on adjacent properties					
Sand drift 6/101	Smith Familie Trust		No comments received		
Sand drift 7/101	Sanddrift Trust		No comments received		
Schutsekama RE/103	Scholtz Schutsekama Trust		No comments received		
Schutsekama 1/103	Eskom Beherend Ltd		No comments received		
Vaalbosch Pan RE/102 (HO)	On behalf of the republic of south Africa Department of Rural Development and Land Reform Northern Cape Manager: Cynthia Nkoane		No comments received		
Registered I&AP					

Interested and Affected Parties	McGregor Museum Head of Zoology Department: Beryl Wilson	<p>Email received 24/06/2016 asks that Milnex 189 CC register Mc Gregor Museum (Beryl Wilson) as an I&AP. It further states the following:</p> <p>As a zoologist and field biologist, I am concerned that the envisaged area forms a vital link in the habitat and breeding activities of the Critically Endangered White-backed Vultures in the Kimberley region. Apart from the direct disturbance factors, the 30 breeding pairs currently making use of the area will be indirectly negatively affected by the destruction of protected Acacia trees and any other changes to the water table and water quality in the vicinity.</p> <p>In addition, to have an unsightly footprint immediately adjacent to Mokala National Park is not in the best interests of our national heritage objectives.</p>	<p>Email sent 27/06/2016 states that Milnex 189 CC have received all their emails and that they have been registered as I&APs. They were thanked for making Milnex 189 CC aware of the presence of White-backed Vultures and assures them that all their comment will be noted in the report.</p> <p>The dropbox link to all the information was included in the email and the date verified until when they can comment on the draft Scoping Report, as well as the date, time and coordinates of the public meeting.</p>	Camel thorn & White-backed vultures page 24-25
	<p>South African National Parks. (SANParks)</p> <p>Mokala National Park: Deon Joubert</p> <p>Dr. Hugo Bezuidenhout Conservation Services: Scientific Services</p>	<p>Email received 24/06/2016 states the following:</p> <p>Could you please register us as Interested and Affected Party – as you can see in the google image – this is adjacent to Mokala National Park. This will be in our immediate footprint of expansion and therefore it is a concern from SANParks.</p> <p>We are particularly concern about the vulture population breeding in the area as well as ground water – the area inside the Park has a sensitive Camel Thorn Woodland – that benefit from groundwater and I am particularly worried that if mining is allowed then it would be to the detriment of the protected Camel Thorn woodland.</p>	<p>Email sent 13/07/2016 responds to the email received from Deon Joubert on the 12/07/2016 and states that Deon Joubert must please note that Mr. Louw (SANParks) was listed as an I&AP on the 5th of July 2016.</p>	

	<p>Specialist Scientist: Vegetation Ecology</p>		<p>Email received 27/06/2016 states that Dr. Hugo will be out of the office until 11/07/2016.</p> <p>Deon Joubert replied to the email sent 27/06/2016 on the 12/07/2016 and ask that Willem Louw be listed as an I&AP in the I&AP list.</p>		
	<p>Endangered Wildlife Trust</p> <p>Coordinator: Platberg Karoo Raptor Project Birds of Prey Programme</p> <p>Ronelle Visagie</p>		<p>Email received 26/07/2016 asks that Milnex 189 CC register Engangered Wildlife Trust (Ronelle Visagie) as an I&AP. It further states the following:</p> <p>Ek moniteer die krities bedreigde Witruugaasvoëlpopulasie op Mokala NP en is baie bekommerd oor die uitwerking wat hierdie ontwikkeling op die aasvoëls, beskermde kameeldoringbome en die watertafel gaan hê.</p>		
	<p>Bird Life South Africa</p> <p>Policy & Advocacy Manager: Simon Gear</p>		<p>Email received 29/07/2016 states that asks that Milnex 189 CC register Bird Life South Africa (Simon Gear) as an I&AP. It further states the following:</p> <p>We note with concern the proposal to mine in an area that acts as a breeding site for White-backed Vulture which use the camel thorn trees as nesting sites. We therefore request that appropriate avifaunal and floral studies make up your investigation.</p>	<p>Email sent 29/06/2016 states that Bird Life South Africa will be listed as an I&AP and that the request is noted and will be taken in to consideration.</p>	
	<p>South African National Parks (SANParks)</p> <p>Manager: Park Planning & Development Conservation Services Division, (CSD)</p>		<p>Email received 05/07/2016 states the following:</p> <p>Thank you for the tele-discussion earlier today.</p> <p>I would like to request to be registered as Key I&AF on behalf of South African National Parks, (SANParks). As you are aware SANParks is the management authority for Mokala National Park, (MNP) close to the proposed prospecting site. I will be responsible to comment on behalf of SANParks & MNP during the public participation process, (please find my contact details below).</p>	<p>Email sent 05/07/2016 states that Mr. Louw must please find the attached Draft Scoping report and dropbox link.</p>	

	<p>Mr. Willem J Louw</p>	<p>Kindly confirm status of the prospecting right process and forward me a copies of all relevant documents in the public domain, i.e. draft scoping report; public notices and website links, if any.</p> <p style="text-align: center;">Email exchange on the 05/07/2016 at different times are as follows:</p> <p><u>3:11 PM</u> Mr. Louw ask that Milnex 189 CC should confirm if he has been listed as a Key I&AP on behalf of SANParks.</p> <p><u>04:55 PM</u> Please note that SANParks need to be registered as <u>KEY interested and Affected Party</u></p>	<p><u>3:56 PM</u> Email states that he has be listed as an I&AP.</p> <p><u>05:31 PM</u> Please note that you (SANParks) have been registered as an I&AP in the I&AP list. If you follow the dropbox link, under Appendix 6.1 you will see the I&AP list (Ref01). If you open the document, you will see you are listed.</p>	
	<p>Department of Agriculture, Forestry and Fisheries</p> <p>Directorate: Forestry Management (Other Regions) Northern Cape, Designation: Chief Forester (NFARegulation)</p> <p>Jacoline Mans</p>	<p>Email received 07/07/2016 with attached document states the following:</p> <p>I saw the notice of an EIA for the above-mentioned project. Attached please find a letter for your attention. Please register this Department as a Commenting Authority.</p> <p>Attached letter dated 07/07/2016 states the following:</p> <p>1. <u>Department Mandate</u> The Directorate: Forestry Management (Other Regions) in the National Department of Agriculture, Forestry and Fisheries (DAFF) is responsible for implementations of the National Forestry Act, Act 84 of 1998 (NFA) and the National Veld and Forest Fire Act, Act 101 of 1998 as amended. The development must take note of the following sections of the NFA:</p>	<p>Email sent 07/07/2016 with attached documents states the following:</p> <p>Just to acknowledge that I have received your email. Please note that we have already registered your Department as an I&AP (Organs of state having jurisdiction), but we will list you as the new contact person. Please see the letter that was posted to your Department.</p>	

		<p>1.1 Section 12(1) 1.2 Section 15(1) 1.3 Section 62(2)(c) 1.4 Section 58 (1) 1.5 The list of protected tree species under section 12(1) of the National Forest Act, 1998 (Act No. 84 of 1998) was published in GN1161 of 20 November 2015.</p> <p><u>2. Comments on notification of EIA</u> 2.1. Please register DAFF as a commenting authority and forward a copy of the EIA documentation to J. Mans, P.O. Box 2782, Upington, 8800 or physical address: 26 Olien street, Louisvale Road, Upington, 8801. 2.2. Kindly ensure that the proper assessment is done of potential impacts on protected tree species such as Camel thorn <i>Accacia (vachellia) erioloba</i>. These trees (if present on site) provide an important source of food for a variety of animals and a habitat for birds. Direct impacts on tree may have indirect impacts on fauna and specifically avifauna, which should be taken into consideration during the impact assessment.</p>		
		<p>Email received 07/07/2016 states the following:</p> <p>Thank you for your e-mail. The address provided of DAFF Kimberley is incorrect, our Kimberley address is P.O. Box 2303, 2 Harrison Street, Kimberley. DAFF Kimberley office confirmed there is no one by the name of Mr. Dimakatso Viljoen Mothibi working in that office.</p>	<p>A CD was posted on the 08/07/2016 to Jacoline Mans</p>	

			Perhaps it is someone at the Provincial Dept. of Agriculture? Please note the Department of Forestry is a Branch in the larger DAFF and we operate almost independently, because we work with different pieces of legislation and have different mandates. Please send the EIA documentation to the Upington office and note I only represent Forestry (not Agriculture). Please note we cannot receive documentation via dropbox, our system blocks it. You can send the EIA reports on a C.D. or hardcopy.		
The Municipality in which jurisdiction the development is located					
Siyancuma Local Municipality	Municipal Manager Mr Hastings F Nel		No comments received		
Municipal councilor of the ward in which the site is located					
Siyancuma Local Municipality	Ward 2 Councillor		No comments received		
Organs of state having jurisdiction					
Northern Cape Department of Environmental Affairs and Nature Conservation (DEANC)	Mrs. Doreen Werth		No comments received		
DMR Department of Mineral Resources, Northern Cape. (DMR)	Regional manager Sunday Mabaso DD Mine Env Management: Me. Raisibe Sekepane, Mr Selohela Oliphant Mr. Johannes Nematatani		Letter dated 14/07/2016 acknowledges the receipt of the application		
Northern Cape Department of Water & Sanitation (DWS)	Mr. Abe Abrahams		No comments received		

NC Department of Agriculture, Forestry and Fisheries (DAFF)	Mr. Dimakatso Viljoen Mothibi		No comments received		
Department of Roads and Public Works (DRPW)	HOD: Ms. Ruth Palm Mr Tshiamo Pitso		No comments received		
Northern Cape Department of Rural Development & Land Reform, Land Claims Commissioner: Regional Offices	Chief Director: Ms Mangalane Du Toit Ryan Oliver		Email received 15/06/2016 and attached letter dated 15/06/2016 states that this communique serves to advise Milnex 189 CC that according to the Northern Cape database there is no restitution lodged against the property description.	Email sent 15/06/2016 is proof of land claims consultation.	
Other-					
Pixley Ka Seme District Municipality	Municipal Manager: Ms Z M Bogatsu		No comments received		
WESSA	Mr. John Wesson		No comments received		
South African Heritage Resources Agency (SAHRA)	Philip Hine		No comments received		

iv) The Environmental attributes associated with the sites

(1) Baseline Environment

The baseline environment is described with specific reference to geotechnical conditions, ecological habitat and landscape features, Soil, land capability and agricultural potential, climate and the visual landscape.

(a) Type of environment affected by the proposed activity.

(its current geographical, physical, biological, socio- economic, and cultural character).

Geology and Soils

From the geological map, the following geological information is obtained:

The area is underlain by the following geological types. Outcrops of the andesitic lavas of the Ventersdorp Supergroup, which is mostly overlain by calcrete, occur in isolated patches as rocky hills. Outcrops of tillite of the Dwyka Formation and shale of the Prince Albert Formation (Karoo Sequence) occur in the north-north-western part of the study area. The largest part of the study area is underlain by Aeolian sand and sometimes alluvial gravels of tertiary to recent age covering Dwyka tillite. Surface limestones occur sporadically in the area. During the 1920s relatively rich diamond deposits were found in the ancient gravel filled water course of the Vaal River within area. The heaps of mixed gravel still present in the area attest to the disturbance to which it was subjected.

The larvas are green to grey-green in colour. The non-amygdaloidal varieties occur within the study area. The amygdaloidal, which comprise quartz, agate, chalcedony and carnelian are a major source of the Vaal Rover agates. Stratigraphically the larvas belong to the Allenridge formation and represents the uppermost volcanic stage of the Ventersdorp Supergroup. Quartzites of the Bothaville formation which underlies the ilenridge formation, rarely outcrop within the study area and are usually exposed where alluvial diggings have removed the surficial deposits.

The older gravels within the study area occur in channels or so-called “sluits”. One prominent “sluit” is found within the study area, however there exists no evidence in the literature to suggest that the channels are sites of eroded kimberlite dykes.

Ecological habitat and landscape features

Vachellia erioloba (Camel Thorn tree)

It is noted that *Vachellia erioloba* (Camel Thorn tree) is a **protected tree species** under the National Forests Act No. 84 of 1998 are listed in Table 4.9. In terms of a part of section 51(1) of Act No. 84 of 1998, no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a license granted by the Minister.

In cases where the trees will need to be cut, disturbed, damaged or destroyed or possessed, collected, removed, transported, exported, purchased, sold or donated a flora permit will be applied for with the Northern Cape Department of Environmental Affairs & Nature Conservation.

White backed vultures:

Primarily a lowland species of open wooded savanna, particularly areas of Acacia. It requires tall trees for nesting. However it has also been recorded nesting on electricity pylons in South Africa (de Swardt 2013). A gregarious species congregating at carcasses, in thermals and at roost sites. It nests in loose

colonies. An ongoing study near Kimberley, South Africa, shows the number of breeding pairs has increased by 72% in 22 years (from 50 to 86 breeding pairs) (A. Anthony in litt. 2015). However McKean et al. (2013) suggest that if current levels of exploitation continue in South Africa, the species could become locally extinct by 2034 or sooner. Overall it is suspected to have declined very rapidly.

White backed vultures are classified as Category C1 as **nationally threatened with extinction (critically endangered)**, according to the IUCN criteria for threatened status (Important Bird and Biodiversity Areas Directory 2015). In order to conserve the White-backed Vulture, it is necessary to protect all its breeding colonies in this region.

In terms of vegetation type the site falls within the 1. Kimberley Thornveld, 2. Vaalbos Rocky Shrubland & 3. Upper Gariiep Alluvial Vegetation_vegetation type (Mucina and Rutherford, 2006). **See figure 3 below and appendix 7**

1. According to Mucina and Rutherford (2006:516), the Kimberley Thornveld vegetation covers the North West, Free State and Northern Cape Provinces: Most of the Kimberley, Hartswater, Bloemhof and Hoopstad Districts as well as substantial parts of the Warrenton, Christiana, Taung, Boshof and to some extent the Barkley West District. This thornveld is situated on an altitude of 1050m – 1400m. The conservation of this thornveld type, is **Least Threatened** with a target of 16%. Only 2% of this thornveld is statutorily conserved in Vaalbos National Park and in Sanveld, Bloemhof Dam and S.A. Lombard Nature Reserve. As much as 18% is already transformed, mostly by cultivation. Low erosion is associated with this type of thornveld. The area is mostly used for cattle farming or game ranching. Overgrazing leads to encroachment of *Acacia mellifera* subsp. *detinens*
2. The Vaalbos Rocky Shrubland covers the Northern Cape and Free State Provinces. It extends along solitary hills and scattered ridges east of the confluence of the Orange and Vaal Rivers, mainly in the Kimberley and Herbert Districts and west of a line bounded by the western Free State towns of Luckhoff, Petrusburg, Dealesville, Bultfontein and Hertzogville. This shrubland is situated on an altitude of 1000-1400m. The vegetation and landscape features can be described as slopes and elevated hills and ridges. Evergreen shrub communities dominated by *Tarchonanthus camphoratus*, *Olea europaea* subsp. *Africana*, *Euclea crispa*, *Diospyros lycioides*, *Rhus burchellii* and *Buddleja saligna*. Sheltered, cool sites include trees such as *R. lancea*, *Celtis Africana* and *Ziziphus mucronata*. On the footslopes of the dolerite hills, where calcrete-rich soils occur, shrubs and small trees of *Acacia tortilis* and *Z. mucronata* can be dominant.
3. The Upper Gariiep Alluvial Vegetation covers the Free State and Northern Cape Province: Broad alluvia of the Orange River, lower Caledon as well as lower stretches of the Vaal, Riet and Modder rivers as far as Groblershoop. These river stretches are surrounded by vegetation units of broad transitional regions between the dry facies of the Savanna and Grassland and northern regions of the Nama-Karoo Biome. Altitude ranging from 1000 – 1500m.

The area has flat alluvial terraces supporting complex of riparian thickets (gallery forests) dominated by native *Acacia karroo* and *Diospyros lycioides*, flooded grasslands, reed beds and ephemeral herblands populating mainly sand banks within the river and on its banks. The vegetation has a conservation which is **vulnerable** with a target of 31%. Only about 3% statutorily conserved in Tussen Die Riviere, Gariiep Dam and Oviston Nature Reserve. More than 20% transformation for cultivation

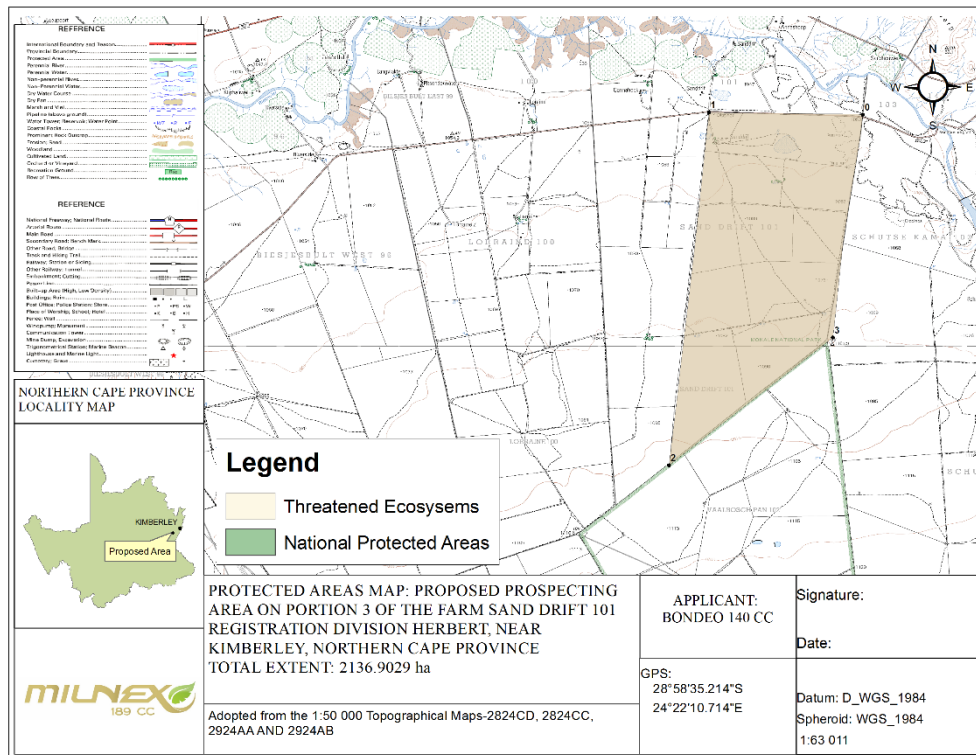
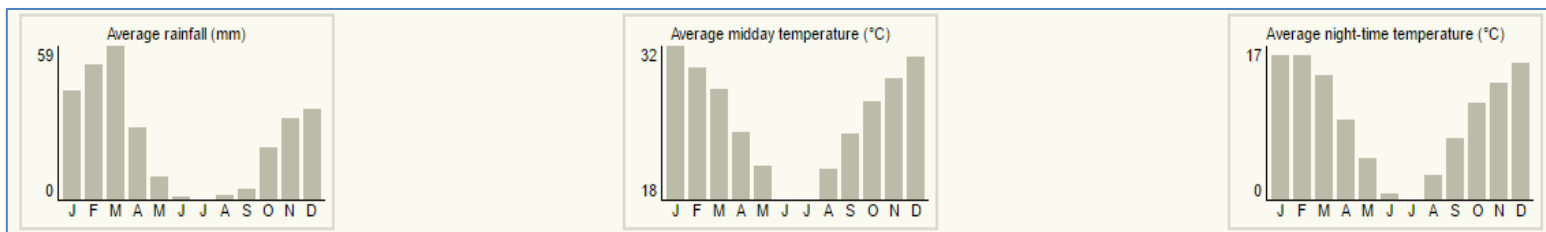


Figure 4: Protected Areas Map

Land capability and agricultural potential

• Climate and water availability

Kimberley normally receives about 283mm of rain per year, with most rainfall occurring mainly during summer. The chart below (lower left) shows the average rainfall values for Kimberley per month. It receives the lowest rainfall (0mm) in July and the highest (59mm) in March. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Kimberley range from 18°C in June to 32°C in January. The region is the coldest during July when the mercury drops to 0.3°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures (SAExplorer, 2016).



• Agricultural / land capability

Land capability is the combination of soil suitability and climate factors. The site and surrounds has a land capability classification, on the 8 category scale, of Class 5 & 7 non-arable, which is limited to grazing, woodland or wildlife. The site has very severe limitations

that makes it unsuited to cultivation and that restrict its use largely to grazing, woodland or wildlife (refer to Land capability map on figure 5 and attached as **Appendix 5**).

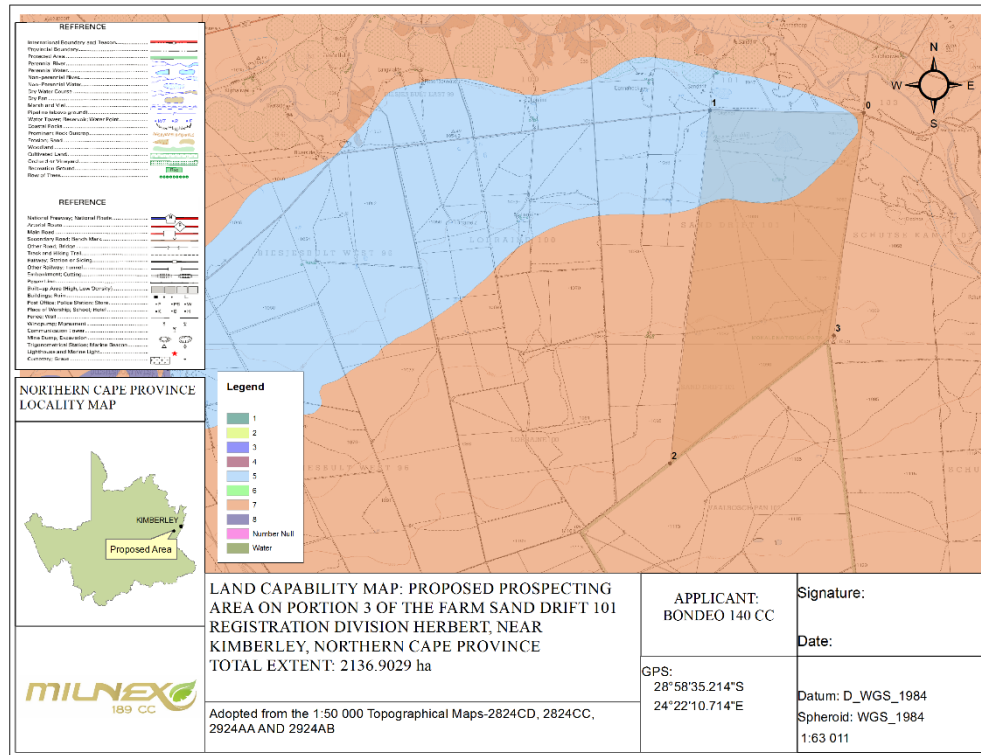


Figure 5: Land capability Map

Critical Biodiversity Area

According to B-GIS “Critical biodiversity areas (CBAs) are areas of the landscape that need to be maintained in a natural or near-natural state in order to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services”, therefore the purpose of CBA’s is simply to indicate spatially the location of critical or important areas for biodiversity in the landscape.

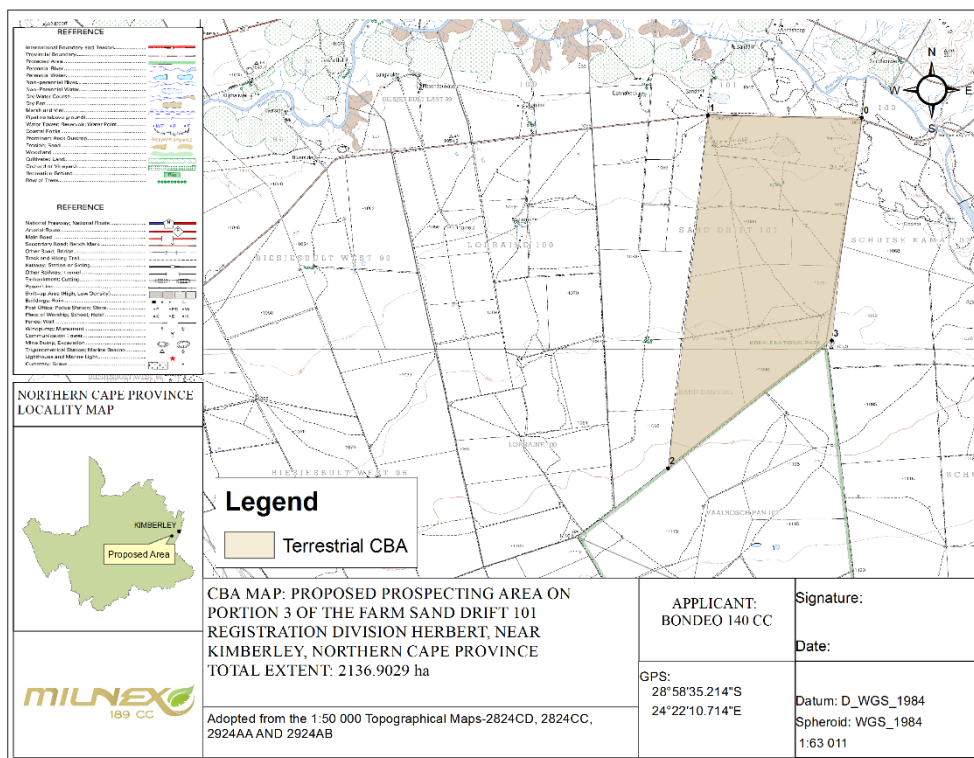


Figure 6: Critical Biodiversity Area Map

Description of the socio-economic environment

• Socio-economic conditions

The municipality has relatively high levels of basic services, partially integrated society, medical facilities in Douglas and Griekwastad, one of the biggest correctional services in the province and is the neighbour to Kimberley, the provincial and legislative capital of the province. It still has major inequalities to overcome and in common with the rest of the country, a skew and sluggish economy to transform and speed up.

Economy

The following economic sectors that contributed the most to the DRSDM Gross Domestic Product (GDP):

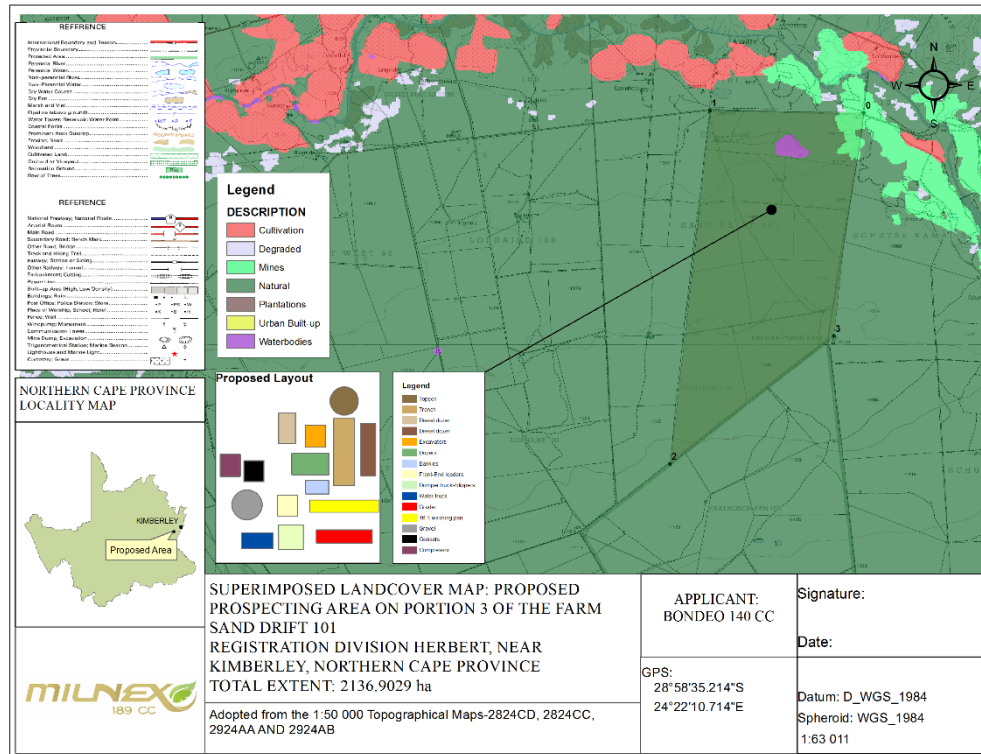
- » Community services (33.1%),
- » Agriculture (17.1%)
- » Finance - 16.2%
- » Trade (12.7%),
- » Transport (9%),
- » Manufacturing (4%)
- » Mining (3.2%),
- » Construction (3.2%)

• Cultural and heritage aspects

Special attention will be given to the identification of possible cultural or heritage resources on site.

(b) Description of the current land uses.

The site survey revealed that land uses on and in the immediate vicinity of the proposed development are essentially comprised of mining, water body and natural land.



(c) Description of specific environmental features and infrastructure on the site.

The proposed area consist of diggings & 1 non-perennial water (pan). Where applicable a Water Use License Application will be launched for conducting prospecting operations

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

A Locality map is attached in **Appendix 3**.

v) Impacts identified

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability and duration of the impacts

➤ **Impacts during construction phase:**

- Impacts on the fauna and flora
- Impacts on the soil
- Impacts associated with the geology of the site
- Impacts on existing services infrastructure

- Impacts on surface water (wetlands/pans)
- Temporary employment and other economic benefits
- Impacts on heritage resources
- Impacts during the operational phase:
 - Impacts on the soil
 - Impacts associated with the geology of the site
 - Impacts on surface water (wetlands/pans)
 - Increase in employment and other economic benefits
 - Visual impacts
 - Generation of income to the Local Community
 - Pressure on existing services infrastructure and water sources.
- Impacts during the decommissioning / mine closure phase:
 - Loss of permanent employment & the creation of temporary employment

vi) Methodology used in determining the significance of environmental impacts

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

Scoping methodology

The contents and methodology of the scoping report aims to provide, as far as possible, a user-friendly analysis of information to allow for easy interpretation.

- **Checklist**: The checklist consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts.
- **Matrix**: The matrix analysis provides a holistic indication of the relationship and interaction between the various activities, development phases and the impact thereof on the environment. The method aims at providing a first order cause and effect relationship between the environment and the proposed activity. The matrix is designed to indicate the relationship between the different stressors and receptors which leads to specific impacts.

Checklist analysis

The independent consultant a site visit. The site visit was conducted to ensure a proper analysis of the site specific characteristics of the study area. The table below provides a checklist, which is designed to stimulate thought regarding possible consequences of specific actions and so assist scoping of key issues. It consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts. The table highlights certain issues, which are further analysed in matrix format.

Table: Environmental checklist

QUESTION	YES	NO	Un-sure	Description
1. Are any of the following located on the site earmarked for the development?				
I. A river, stream, dam or wetland	×			The proposed area consist of diggings & 1 non-perennial water (pan). Where applicable a Water Use License Application will be launched for conducting prospecting operations
II. A conservation or open space area		×		None.
III. An area that is of cultural importance			×	
IV. Site of geological significance		×		None.
V. Areas of outstanding natural beauty		×		None.
VI. Highly productive agricultural land		×		None.
VII. Floodplain		×		None.
VIII. Indigenous forest		×		None.
IX. Grass land		×		None.
X. Bird nesting sites		×		None.
XI. Red data species		×		None.
XII. Tourist resort		×		None.
2. Will the project potentially result in potential?				
I. Removal of people		×		None.
II. Visual Impacts	×			The visual impact will be managed
III. Noise pollution		×		The noise impact is unlikely to be significant.
IV. Construction of an access road		×		None. Access will be obtained from gravel road off the R357
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		×		None.
VI. Accumulation of large workforce (>50 manual workers) into the site.		×		Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
VII. Utilisation of significant volumes of local raw materials such as water, wood etc.	×			16 feet washing pans which utilise approximately 18 000 L per hour each from which 30% is re-used.
VIII. Job creation		×		Approximately 15 employment opportunities will be created during the construction and operational phase of the project.
IX. Traffic generation		×		None.
X. Soil erosion		×		Only areas earmarked for prospecting will be cleared. The prospecting will be phased and the topsoil stockpiled separately. Concurrent rehabilitation will take place. The soil also has a low erosion potential.
XI. Installation of additional bulk telecommunication transmission lines or facilities		×		None.
3. Is the proposed project located near the following?				
I. A river, stream, dam or wetland	×			Yes, Rietrivier

II. A conservation or open space area		×		Mokala National Park is adjacent to the area applied for.
III. An area that is of cultural importance		×		None.
IV. A site of geological significance		×		None.
V. An area of outstanding natural beauty		×		None.
VI. Highly productive agricultural land		×		None.
VII. A tourist resort		×		Mokala National Park is adjacent to the area applied for.
VIII. A formal or informal settlement		×		None.

5.1 Matrix analysis

The matrix describes the relevant listed activities, the aspects of the development that will apply to the specific listed activity, a description of the environmental issues and potential impacts, and the significance and magnitude of the potential impacts. The matrix also highlights areas of particular concern for more in depth assessment during the EIA process. Each cell is evaluated individually in terms of the nature of the impact, duration and its significance – should no mitigation measures be applied. This is important since many impacts would not be considered insignificant if proper mitigation measures were implemented. The matrix also provides an indication if mitigation measures are available.

In order to conceptualise the different impacts the matrix specify the following:

- **Stressor:** Indicates the aspect of the proposed activity, which initiates and cause impacts on elements of the environment.
- **Receptor:** Highlights the recipient and most important components of the environment affected by the stressor.
- **Impacts:** Indicates the net result of the cause-effect between the stressor and receptor.
- **Mitigation:** Impacts need to be mitigated to minimise the effect on the environment.

Matrix Analysis

LISTED ACTIVITY (The Stressor)	ASPECTS OF THE DEVELOPMENT /ACTIVITY	POTENTIAL IMPACTS		SIGNIFICANCE AND MAGNITUDE OF POTENTIAL IMPACTS			MITIGATION OF POTENTIAL IMPACTS	SPECIALIST STUDIES / INFORMATION	
		Receptors	Impact description	Minor	Major	Duration	Possible Mitigation		
CONSTRUCTION PHASE									
<i>Listing Notice GNR 984, Activity 15: "The clearance of an area of 20 hectares or more, of indigenous vegetation."</i>	Site clearing and preparation Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> Loss or fragmentation of indigenous natural vegetation. Loss of sensitive species. Loss or fragmentation of habitats. 		-	S	Yes	-
			Air	<ul style="list-style-type: none"> Air pollution due to the increase of traffic of construction vehicles. 	-		S	Yes	-
			Soil	<ul style="list-style-type: none"> Soil degradation, including erosion. Loss of topsoil. Disturbance of soils and existing land use (soil compaction). 		-	S	Yes	-
			Geology	<ul style="list-style-type: none"> It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa. 		-	S	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the local sewage plant. 		-	S	Yes	-
			Ground water	<ul style="list-style-type: none"> Pollution due to construction vehicles. 	-		S	Yes	-
			Surface water	<ul style="list-style-type: none"> Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans/dams/streams). 		-	S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"> Job creation. Business opportunities. Skills development. 		+	S	Yes	-
			Visual landscape	<ul style="list-style-type: none"> Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility. 	-		S	Yes	-
			Traffic volumes	<ul style="list-style-type: none"> Increase in construction vehicles. 	-		S	Yes	-
			Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. Increased risk of veld fires. 		-	S	Yes	-

			Noise levels	<ul style="list-style-type: none"> The generation of noise as a result of construction vehicles, the use of machinery such as drills and people working on the site. 	-		S	Yes	-
			Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the proposed activities will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-
			Heritage resources	<ul style="list-style-type: none"> Removal or destruction of archaeological and/or paleontological sites. Removal or destruction of buildings, structures, places and equipment of cultural significance. Removal or destruction of graves, cemeteries and burial grounds. 		-	S	Yes	-
<p><i>Listing Notice GNR 984, Activity 15: "The clearance of an area of 20 hectares or more, of indigenous vegetation."</i></p>	<p><u>Site clearing and preparation</u> Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately. This will inevitably result in the removal of indigenous vegetation located on the site.</p>	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> Loss or fragmentation of indigenous natural vegetation. Loss of sensitive species. Loss or fragmentation of habitats. 		-	S	Yes	-
			Air quality	<ul style="list-style-type: none"> Air pollution due to the increase of traffic. 	-		S	Yes	-
			Soil	<ul style="list-style-type: none"> Soil degradation, including erosion. Disturbance of soils and existing land use (soil compaction). Loss of agricultural potential (low significance relative to agricultural potential of the site). 	-		S	Yes	-
			Geology	<ul style="list-style-type: none"> It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa. 	N/A	N/A	N/A	N/A	-
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the local sewage plant. 	-		S	Yes	-
			Ground water	<ul style="list-style-type: none"> Pollution due to construction vehicles. 	-		S	Yes	-
			Surface water	<ul style="list-style-type: none"> Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans/dams/streams). 	-		S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"> Job creation. Skills development. 		+	S	N/A	-
			Visual landscape	<ul style="list-style-type: none"> Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility due to dust. 	-		S	Yes	-
			Traffic volumes	<ul style="list-style-type: none"> Increase in construction vehicles. 	-		S	Yes	-

		Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. 	-	-	S	Yes	-	
		Noise levels	<ul style="list-style-type: none"> The generation of noise as a result of construction vehicles, and people working on the site. 	-	-	S	Yes	-	
		Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the proposed activity will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-	
		Heritage resources	<ul style="list-style-type: none"> Removal or destruction of archaeological and/or paleontological sites. Removal or destruction of buildings, structures, places and equipment of cultural significance. Removal or destruction of graves, cemeteries and burial grounds. 	N/A	N/A	N/A	N/A	-	
OPERATIONAL PHASE									
<p>Listing Notice GNR 984, Activity 19: "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)"</p> <p>Listing Notice GNR 984, Activity 21: "Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies."</p> <p>Listing Notice GNR 983, Activity 14: "The development of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic meters or more but not exceeding 500 cubic metres."</p>	<p>The key components of the proposed project are described below:</p> <ul style="list-style-type: none"> Supporting Infrastructure - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint 50m² or less. Other supporting infrastructure includes a site office and workshop area. Roads – Access will be obtained from gravel road off the R357. All site roads will require a width of approximately 10m. Fencing - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm. 	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> Fragmentation of habitats. Establishment and spread of declared weeds and alien invader plants (operations). 	-	-	L	Yes	-
			Air quality	<ul style="list-style-type: none"> Air pollution due to the mining activity, crusher plant and transport of the gravel to the designated areas. 	N/A	N/A	N/A	N/A	-
			Soil	<ul style="list-style-type: none"> Soil degradation, including erosion. Disturbance of soils and existing land use (soil compaction). Loss of agricultural potential (low significance relative to agricultural potential of the site). 	-	-	L	Yes	-
			Geology	<ul style="list-style-type: none"> Collapsible soil. Seepage (shallow water table). Active soil (high soil heave). Erodible soil. The presence of undermined ground. Instability due to soluble rock. Steep slopes or areas of unstable natural slopes. Areas subject to seismic activity. Areas subject to flooding. 	-	-	S	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at a licensed landfill site. Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. Increased consumption of water. Approximately 10-68 000 L per hour 	-	-	L	Yes	-
			Ground water	<ul style="list-style-type: none"> Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies. 	-	-	L	Yes	-
			Surface water	<ul style="list-style-type: none"> Increase in storm water runoff. The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion. Destruction of watercourses (pans/dams/streams). 	-	-	L	Yes	-

<p>The storage of diesel in banded diesel tanks, exceeding 80 000 litres.</p> <p>Listing Notice GNR 983, Activity 24(ii): "The development of a road with a reserve wider than 13.5 metres, or where no reserve exists where the road is wider than 8 metres." - The development of 10m wide road, with no road reserve."</p>	SOCIAL/ECONOMIC ENVIRONMENT		<ul style="list-style-type: none"> Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies. 							
		Local unemployment rate	<ul style="list-style-type: none"> Job creation. Security guards will be required for 24 hours every day of the week and general laborers will also be required for the cleaning of the panels. Skills development. 		+	L	Yes	-		
		Visual landscape	<ul style="list-style-type: none"> Change in land-use/sense of place. The site is characterized by open veldt with a rural agricultural sense of place. The use of the area for the prospecting activity will result in the area not being used for livestock grazing anymore until rehabilitated. 		-	L	Yes	-		
		Traffic volumes	<ul style="list-style-type: none"> Increase in vehicles collecting gravel for distribution. 	-		S	Yes	-		
		Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. 	N/A	N/A	N/A	N/A	-		
		Noise levels	<ul style="list-style-type: none"> The proposed development will result in noise pollution during the operational phase. 	-	-	S	Yes	-		
		Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-		
		Heritage resources	<ul style="list-style-type: none"> It is not foreseen that the proposed activity will impact on heritage resources or vice versa. 	N/A	N/A	N/A	N/A	-		
DECOMMISSIONING PHASE										
-	BIOPHYSICAL ENVIRONMENT	Mine closure During the mine closure the Mine and its associated infrastructure will be dismantled.	Fauna & Flora	<ul style="list-style-type: none"> Re-vegetation of exposed soil surfaces to ensure no erosion in these areas. 	+		L	Yes	-	
		Rehabilitation of biophysical environment The biophysical environment will be rehabilitated.	Air quality	<ul style="list-style-type: none"> Air pollution due to the increase of traffic of construction vehicles. 	-		S	Yes	-	
			Soil	<ul style="list-style-type: none"> Backfilling of all voids Placing of topsoil on backfill 	+		L	Yes	-	
			Geology	<ul style="list-style-type: none"> It is not foreseen that the decommissioning phase will impact on the geology of the site or vice versa. 	N/A	N/A	N/A	N/A	-	
			Existing services infrastructure	<ul style="list-style-type: none"> Generation of waste that need to be accommodated at the local landfill site. Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant. Increase in construction vehicles. 	-		S	Yes	-	
			Ground water	<ul style="list-style-type: none"> Pollution due to construction vehicles. 	-		S	Yes	-	
			Surface water	<ul style="list-style-type: none"> Increase in storm water run-off. Pollution of water sources due to soil erosion. Destruction of watercourses (pans/dams/streams). 	-		S	Yes	-	
			SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"> Loss of employment. 		-	L	Yes	-
				Visual landscape	<ul style="list-style-type: none"> Potential visual impact on visual receptors in close proximity to proposed facility. 	-		S	Yes	-
		Traffic volumes		<ul style="list-style-type: none"> Increase in construction vehicles. 	-		S	Yes	-	

			Health & Safety	<ul style="list-style-type: none"> Air/dust pollution. Road safety. Increased crime levels. The presence of mine workers on the site may increase security risks associated with an increase in crime levels as a result of influx of people in the rural area. 	-			Yes	-
			Noise levels	<ul style="list-style-type: none"> The generation of noise as a result of construction vehicles, the use of machinery and people working on the site. 	-		S	Yes	-
			Tourism industry	<ul style="list-style-type: none"> Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area. 	N/A	N/A	N/A	N/A	-
			Heritage resources	<ul style="list-style-type: none"> It is not foreseen that the decommissioning phase will impact on any heritage resources. 	N/A	N/A	N/A	N/A	-

(N/A) No impact (+) Positive Impact (-) Negative Impact (S) Short Term (M) Medium Term (L) Long Term

vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

- Increased ambient noise levels resulting from geophysics site fly-overs and increased traffic movement during all prospecting phases.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on environmental resources utilized by communities, landowners and other stakeholders.
- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on ecosystem functioning.
- Increased vehicle activity within the area resulting in the possible destruction and disturbance of fauna and flora.
- Poor access control to farms which may impact on cattle movement, breeding and grazing practices.
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
- Potential visual impacts caused by prospecting activities.
- Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

viii) The possible mitigation measures that could be applied and the level of risk.

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

When the comment period ends, comments received will be included in the comments and response form/table (See Appendix 6 for comments and response form).

ix) The outcome of the site selection Matrix. Final Site Layout Plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)

Refer to the proposed site layout map below and attached as **Appendix 5**.

x) Motivation where no alternative sites were considered.

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter further Diamond Reserves on farm Sand Drift 101 were identified.

Furthermore, no other properties have been secured by the applicant, Bondeo 140 CC

xi) Statement motivating the preferred site.

(Provide a statement motivating the final site layout that is proposed)

The site is preferred due to its possibility of having diamond reserves, the property is also only suitable for low potential grazing land due to the climate conditions

No other properties have been secured by the applicant.

(i) Plan of study for the Environmental Impact Assessment process

i. Description of alternatives to be considered including the option of not going ahead with the activity.

The option of not approving the activities will result in a significant loss of valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

ii. Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, Loading, hauling and transport, and mining activities such as Excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).

Table: Aspects to be assessed

Aspects / potential impacts	Description of the aspect	Specialist studies / technical information
Biophysical Environment		
Impacts on the fauna and flora	Refer to Matrix table	EAP assessment (using desktop studies, GIS, site visits and the book written by Mucina and Rutherford(The Vegetation of South Africa, Lesotho and Swaziland) An Ecological study will be conducted by a specialist.
Impacts on the air quality	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on the soil	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts associated with the geology of the site	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on existing services infrastructure	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on ground and surface water	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Socio / Economic Environment		
Impacts on local employment rate	Refer to Matrix table	EAP assessment (using desktop studies, IDP's and SDF's)

Impacts on visual landscape	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on traffic volumes	Refer to Matrix table	EAP assessment (using desktop studies, GIS using BGIS data, site visits)
Impacts on health & safety	Refer to Matrix table	EAP assessment (desktop studies, site visits)

iii. Description of aspects to be assessed by specialists

An Ecological study will be conducted by a registered specialist.

iv. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The environmental assessment aims to identify the various possible environmental impacts that could result from the proposed activity. Different impacts need to be evaluated in terms of their significance and in doing so highlight the most critical issues to be addressed.

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence. Significance is calculated as shown in the table below.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

v. The proposed method of assessing duration significance

Impact Rating System

Impact assessment must take account of the nature, scale and duration of impacts on the environment whether such impacts are positive or negative. Each impact is also assessed according to the project phases:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance should also be included. The rating system is applied to the potential impacts on the receiving environment and includes an objective evaluation of the mitigation of the impact. In assessing the significance of each impact the following criteria is used:

Table: The rating system

NATURE		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
DURATION		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated

		by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
INTENSITY/ MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
REVERSIBILITY		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		

This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula: (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.		
The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description
6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive medium impact	The anticipated impact will have moderate positive effects.

51 to 73	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive high impact	The anticipated impact will have significant positive effects.
74 to 96	Negative very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive very high impact	The anticipated impact will have highly significant positive effects.

vi. The stages at which the competent authority will be consulted

Consultation with the competent and commenting authorities will continue throughout the duration of impact assessment phase. The authorities will also comment on whether they deem it necessary to conduct any specialist studies. On-going consultation will include:

- Submission of the Scoping following a 30 day public review period (and consideration of comments received).
- Submission of the EIR following a 30 day public review period (and consideration of comments received).
- Arrangements will be made to discuss the report with the Environmental Officer responsible for the project during the review period.
- An opportunity to visit and inspect the site.

vii. Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

1. Steps to be taken to notify interested and affected parties.

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein).

All registered I&APs and relevant State Departments will be given the opportunity to review the Scoping, EIR and EMP in accordance with Regulation R982. A minimum of 30 days commenting period will be allowed and all stakeholders and I&APs will be given an opportunity to forward their written comments within that period. All issues identified during this public review period will be documented and compiled into a Comments and Response Report to be included as part of the Final EIR to be submitted to the Northern Cape Department of Mineral Resources.

2. Details of the engagement process to be followed.

(Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings and records of such consultation will be required in the EIA at a later stage).

The public participation process will be conducted strictly in accordance with Regulations 39-44. The following three categories of variables will take into account when deciding the required level of public participation:

- The scale of anticipated impacts.

- The sensitivity of the affected environment and the degree of controversy of the project.
- The characteristics of the potentially affected parties.

the following public participation mechanisms will be used:

- Newspaper advertisement in local newspaper
- Site notices
- Direct notification of surrounding land owners and occupiers
- Circulation of scoping report
- Circulation of EIR
- Public participation meeting
- Direct notification to all stakeholders of the Environmental Authorisation given

3. Description of the information to be provided to Interested and Affected Parties.

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land).

The letter provided to I&APs comprises of a activity, extent and location description, including a locality map of the proposed activity and a Dropbox link to the full Scoping report and Appendices. It also indicates where a hard copy of the report can be viewed or if the need arises for a copy of the report a request can be sent to the relevant EAP who will forward a CD containing all the relevant information.

viii. Description of the tasks that will be undertaken during the environmental impact assessment process

Tasks to be undertaken

The following sections describe the tasks that will be undertaken as part of the EIA process.

- **Project Description**

Further technical and supporting information will be gathered to provide a more detailed project description. This will include a detailed site layout plan that will be compiled once the low – medium areas of sensitivity have been indicated.

- **Location alternatives**

This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity. No other properties have at this stage been secured by Bondeo 140 CC near Kimberley area to potentially mine alluvial diamonds and diamonds general and diamonds.

- **Activity alternatives**

The Scoping process also needs to consider if the development of an alluvial diamond, diamonds general and diamonds mine would be the most appropriate land use for the particular site.

Mining of other commodities – Diggings were visible on the locality map, but from the surface and desktop assessment there are no indications that there are other commodities to be mined on the site, except alluvial diamond, diamonds general and diamonds.

Agriculture – Due to the site being non-arable, in terms of crop production, the most of the portions of the property is not preferred. It can however be used for low density cattle crazing.

- **Design and layout alternatives**

Design alternatives were considered throughout the planning and design phase (i.e. where is the diamond bearing gravel located?). In this regard discussions on the design were held between the EAP and the developer. The layout follows the limitations of the site and aspects such as, roads, site offices and workshop area as well as fencing– refer **Appendix 3**.

- **No-go alternative**

This alternative considers the option of 'do nothing' and maintaining the status quo. The description provided in section H of this report could be considered the baseline conditions (status quo) to persist should the no-go alternative be preferred. The site is currently zoned for agricultural land uses. Should the proposed activity not proceed, the site will remain unchanged and will continue to be used for low density cattle grazing.

- **Compilation of Environmental Impact Report**

An EIR will be compiled to meet the content requirements as per Appendix 3 of GNR982 of the EIA Regulations (4 December 2014) and will also include a draft Environmental Management Programme containing the aspects contemplated in Appendix 4 of GNR982.

(ix) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

ACTIVITY whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring and through rehabilitation..	POTENTIAL FOR RESIDUAL RISK
Impacts on the fauna and flora	Surface disturbance	Monitor through rehabilitation	low
Impacts on the air quality	dust	Dust Control	low
Impacts on the soil	Erosion	Storm water control	low
Impacts associated with the geology of the site	Fly rock	Blasting controls	low
Impacts on ground and surface water	Ground and surface water contamination	Storm water control, avoidance	low
Impacts on visual landscape	dust	Dust control measures	low
Impacts on traffic volumes	dust	Dust control measures	low

l) Other Information required by the competent Authority

i) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The prospecting will not impact directly on any socio-economic aspects. Indirect socio-economic benefits are expected to be associated with the creation of employment in the Northern Cape Province.

2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The prospecting will not impact on any heritage estate referred to in section 3(2) of the National Heritage Resources Act. In terms of the National Heritage Resource Act no 25 of 1999. Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA will be contacted immediately and work will stop.

m) Other matters required in terms of sections 24(4)(a) and (b) of the Act.

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix 4**).

From a local perspective on Portion 3 of the farm Sand Drift 101, Registration Division Herbert RD; Northern Cape Province are preferred due to the sites mineral resources. No other properties have been secured by Bondeo 140 CC for the purpose of prospecting. The specific site has been chosen for its mineral resources thus making an alternative site selection null and void.

j) UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I Danie Labuschagne herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.



Signature of the EAP

DATE: 19-07-2016

k) UNDERTAKING REGARDING LEVEL OF AGREEMENT

I Danie Labuschagne herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.



Signature of the EAP

DATE: 19-07-2016

-END-