DRAFT BASIC ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

PIETER JACOBUS SMIT

26 June 2023

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DRAFT BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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: Pieter Jacobus Smit

TEL NO:

FAX NO: tigereye@telkomsa.net

POSTAL ADDRESS:

PHYSICAL ADDRESS:

FILE REFERENCE NUMBER SAMRAD:

NC 30/5/1/3/3/2/1/11061MP

FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/3/3/2/1/11061MP

1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002as amended), the Minister must grant a mining 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 appliPJSle 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 a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advisedthat 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 thereofto 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.

2. Objective of the basic assessment process

The objective of the basic assessment process is to, through a consultative process—

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) identify the alternatives considered, including the activity, location, and technology alternatives;

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biologi cal, social, economic, heritage , and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:

  (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
  (ii) the degree to which these impacts—
    (aa) can be reversed;
    (bb) may cause irreplaceable loss of resources; and
    (cc) can be managed, avoided or mitigated;

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
  (i) identify and motivate a preferred site, activity and technology alternative;
  (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
  (iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSSSMENT AND BASIC ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: M A Goliath

Tel No.: 0824523693

Fax No.: goliathmalcolm@yahoo.com

e-mail address: goliathmalcolm@yahoo.com

ii) Expertise of the EAP.

(1) **The qualifications of the EAP**
(With evidence). MMC/NHD/LSTD

(2) **Summary of the EAP's past experience**.
(In carrying out the Environmental Impact Assessment Procedure)
EXPERIENCE RELATING TO THIS APPLICATION

Environmental Impact Assessment Reports and Environmental Management Programme Reports Compiled:

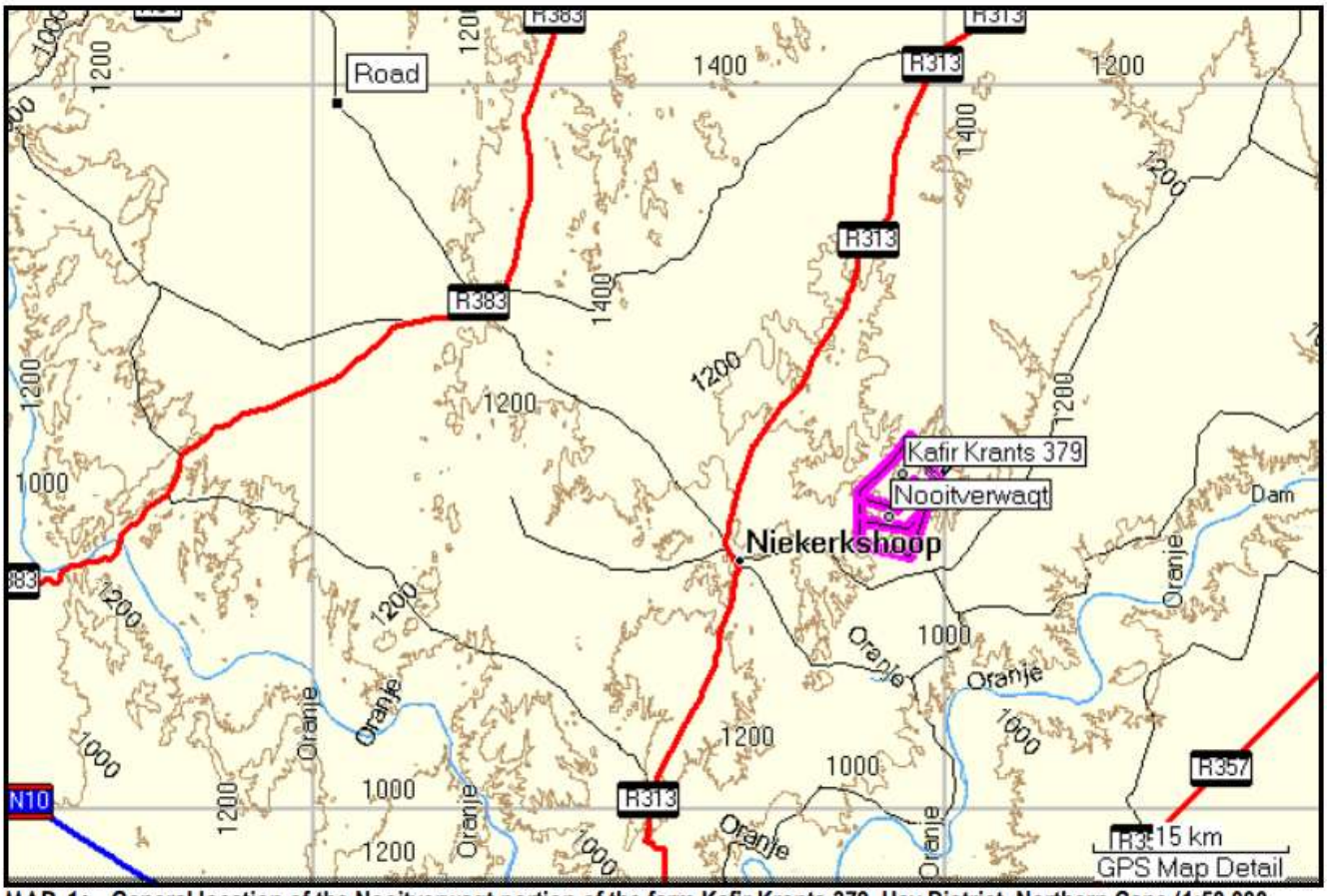
Mynplaas 1120 Diamond Prospecting Right (Free State)
Alexanderfontein Diamonds Prospecting g Right (Northern Cape)
Bucklands Diamonds Mining Right (Northern Cape)
Goodrock Manganese Treatment Mining Right (Northern Cape)
Tswelelang Diamonds Mining Right (Northern Cape)
Ventersvilla Diamonds Prospecting Right (Northern Cape)
Di Blesbokkantoor Diamonds and Gold Prospecting Right (Free State)
Longlands Mining Diamonds Prospecting Right Application x 2 (Northern Cape)
Ormabex Diamonds Prospecting Right (Northern Cape)
Rietfontein 11 Diamonds Prospecting Right (Northern Cape)
Dorstfontein 10 Diamonds Mining Permit (Northern Cape)
Erf 42 Windsorton Diamonds Mining Permit (Northern Cape)
Erf 99 Windsorton Diamonds Mining Permit (Northern Cape)
Alexanderfontein Diamonds Project Prospecting Right (Northern Cape)
Drakenstein, Blaauwkrantz and Groenwater Manganese and Iron ore Mining Right (Northern Cape)
Caravan Park Diamonds Mining Permit (Northern Cape)
Doornpan Manganese Project Prospecting Right (Northern Cape)
Nek 106 Manganese Prospecting Right (Northern Cape)
Rorichshoop Diamonds Prospecting Right (Free State)
Koegas Diamonds Prospecting Right (Northern Cape)
Fonteintjie1 Diamonds Mining Permit (Northern Cape)
Fonteintjie2 Diamonds Mining Permit (Northern Cape)
Wego-Kapstewel 436 Manganese Processing Authorisation (Northern Cape)
GZ Mining-Kapstewel 436 Manganese and Iron ore Prospecting Right
Crelion Beleggings Gravel Mining Permit (Northern Cape)

b) Location of the overall Activity.

Farm Name:	A Portion of the farm Kafir Krants 379 Portion 3 (Nooitverwagt)
Application area (Ha)	4.2 ha
Magisterial district:	Hay
Distance and direction from nearest town	15km Northeast of Niekerkshoop in the Northern Cape
21-digit Surveyor General Code for each farm portion	C03100000000037900000

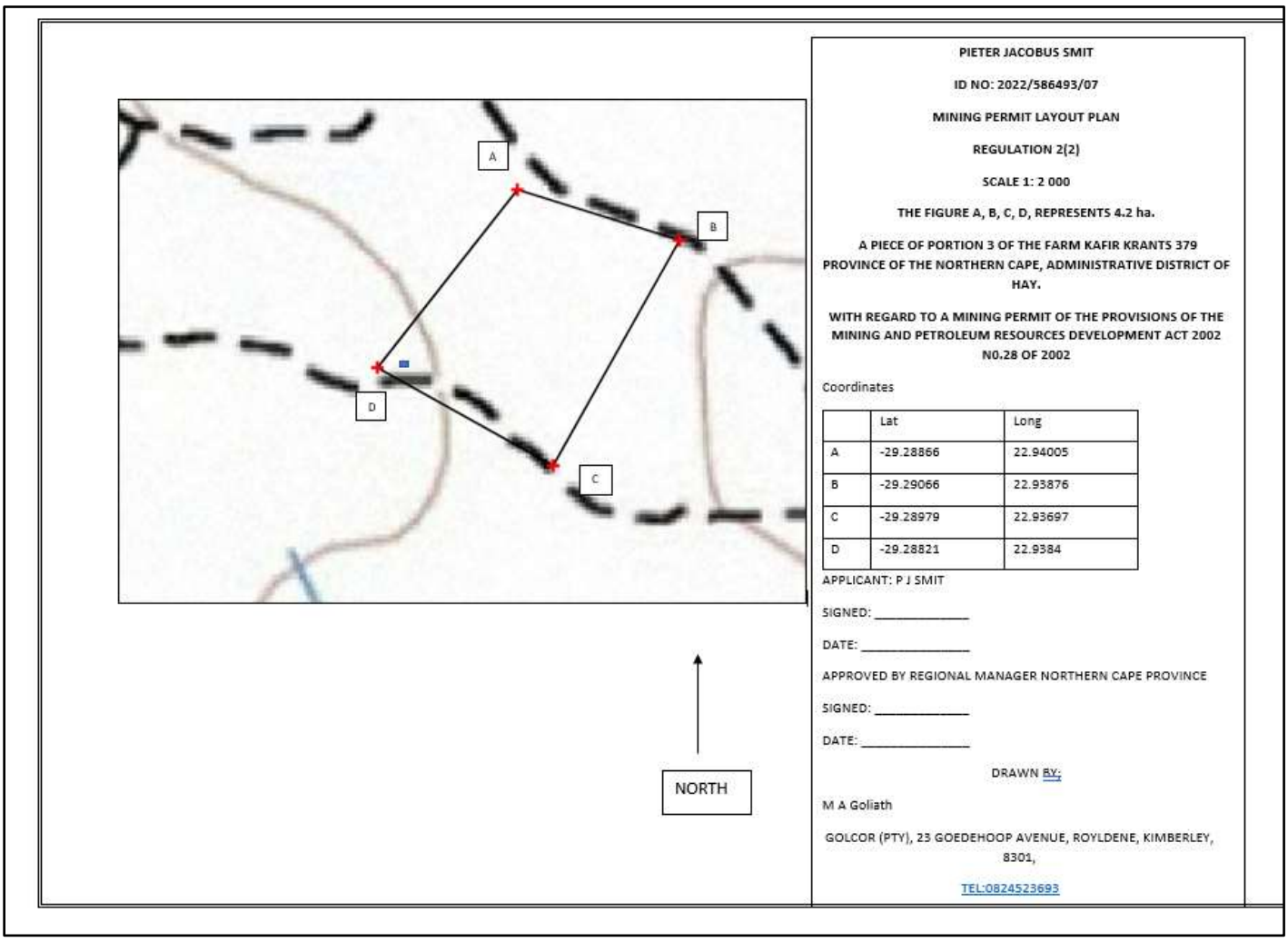
c) Locality map

(Show nearest town, scale not smaller than 1:250000). Enlarged APPENDIX G



MAP 1: General location of the Nooitverwagt portion of the farm Kafir Krants 379, Hay District, Northern Cape (1:50,000 map ref 2922BD)

Layout plan (Reg 2.2)



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

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

(i) Listed and specified activities

NAME OF ACTIVITY **(E.g. For mining -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office,access route **etc…etc…etc** **E.g. for mining**,- 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 m²**	LISTED ACTIVITY (Mark with an **X** where appliPJSle or affected).	APPLIPJSLE LISTING NOTICE ***(GNR 544, GNR 545 or GNR 546)***	WASTE MANAGEMENT AUTHORISATION (Indicate whether an authorisation is requiredin terms of the Waste Management Act). **(Mark with an X)**
Any activity including the operation of thatactivity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Development Act, 2002 (Act No.28 of 2002), including- (a) associated infrastructure, structures and earthworks directly related to the extraction of a	Application lodged for the surveyed portion only 4.2 ha	**X**	GNR 327 LN1, Activity 21	

mineral resource: or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing: but exclude the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies (Activity 21 of Listing Notice 1				
Activity 27 of GNR 327 The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for– (i) the undertaking of a linear activity; or maintenance purposes undertaken in accordance with a maintenance management plan.	Application lodged for the surveyed portion only 1.02 ha	**X**	GNR 327 LN 1, Activity 27	
Once the sourcing of mining material has been completed and closure of the proposed operation is required: "The decommissioning of any activity requiring – i) a closure certificate in terms of Section 43 of the MPRDA; or ii) a mining right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure"	Application lodged for the surveyed portion only 4.2 ha	**X**	GNR 327 LN 1, Activity 22	

(ii) Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity)

Period Requested for Environmental Authorisation:5 Years (Inclusive of renewal periods)

Mining activities will be carried out in the following manners:
Mineral: Tiger's Eye

Mining will be carried out in the following manner:
Methodology and Technology

Portions of the mining area has been mined before under a mining permit with reference NC 30/5/1/3/2/10376MP. During that mining period it was established that the geological seam is of greater seam width than anticipated. The opportunity therefor exists to further mine the mineral resource.
This would be a surface operation with the use of Trackless Mobile Machine (TMM-Excavator). The topsoil would be removed and placed on a dedicated stockpile adjacent to the excavation for use of rehabilitation. An Excavator (12 ton) would excavate the material and place on a production stockpile for hand sorting on the opposite site of the topsoil stockpile. For health and safety reasons, no handsorting is to take place whilst the excavator is in operation.
The sorting process would be done to have the different mineral graded and placed in the respective containers according to the grade.
The excavations would then be rehabilitated by the replacement of the successive layers. Excavations are planned to be 30mx30m and rehabilitated before opening new excavations. This will keep the rehabilitation to a minimum and manageable:

Mining activities will be undertaken in 3 different phases of which each is dependent on the preceding phase. Each phase will provide information that will determine whether the mining activities should be continued or abolished.

Desktop Study
It is more of a literature review and research on all the completed work on the area, it also include accruing results from the companies that have already worked on the area.

Field Mapping
This involves the geologist walking the area and making observations which are then recorded on a map.

Mining
The topsoil, where necessary would be removed and placed in a dedicated stockpile area. Pieter Jacobus Smit (PJS) would conduct its mining operation in the current open excavations and virgin ground.

The topsoil would be removed by means of an excavator where required and placed adjacent to the excavations for later rehabilitation. Excavations would generally be of dimensions 30mx30m. The tiger's eye material would be excavated, hand sorted and loaded onto LDV to the containers (off the mining permit area). The final product would be graded and containerized.

Each excavation would be rehabilitated before a new one is opened to properly manage the rehabilitation program.

Final Rehabilitation
Rehabilitated sites will be monitored to ensure vegetation growth re-occurs.

e) Policy and Legislative Context

APPLIPJSLE 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 appliPJSle to this activity and are to be considered in the assessment process);	REFERENCE WHERE APPLIED **(i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)**	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT (E.g. In terms of the National Water Act:-Water Use License has/has not been applied for).
Constitution of South Africa (Act 108 of 1996)	Section 24: Environmental Right Section 25: Rights in Property Section 27: Water and sanitation Right	Consultations with interested and affected parties as within the Environmental Management Programme
Mineral and Petroleum Resource Development Act; 2002 (Act No.28 of 2002) (As Amended)	A Mining Permit application	A Mining Permit been applied for to DMRE Northern Cape Province.
Conservation of Agricultural Resources Act (Act 43 of 1983) and Regulations	Section 5: Implementation of control measures for alien and invasive plant species. Section 6: Control measures Regulation GNR1048, published on 25 May 1984, in terms of CARA	Part of Environmental Management Programme
Environmental Conservation Act (Act 73 of 1989) and Regulations	Sections 21, 22,25,26 and 28: EIA Regulations, including listed activities Section 28A: Exemptions	Part of Environmental Authorisation and Environmental Management Programme.
Mine Health and Safety Act (Act 29 of 1996) and the Regulations Promulgated thereunder	Entire Act	Part of Environmental Management Programme
Hazardous Substances Act (Act 15 of 1973) and Regulations read together with NEMA and NEMWA	Definition, classification, use, operation, modification, disposal or dumping of hazardous substances	Part of Environmental Management Programme

National Environmental Management Act, 1998(Act 107 of1998) (as Amended) NEMA	Section 2: Strategic environmental management principles, goals and objectives Section 24: Foundation for Environmental Management frameworks. Section 28: require duty of care where reasonable measures are taken to prevent pollution or degradation from occurring, continuing or recurring, or, where this is not possible, to minimise and rectify pollution or degradation of the environment. Section 29: addresses the protection of workers refusing to do environmentally hazardous work. Section 30: addresses procedure to be followed in the event of emergency incident which may impact on the environment. Section 31: Access to environmental information and protection of whistle blowers.	Part of Environmental Management Programme
National Environmental	Section 32: Control of dust	Section 32
Management: Air quality Act (Act 39 of 2004)	Section 34: control of noise Section 35: control of offensive odours Regulation GNR551, published on June 2015 (amended Categories 1to 5 of GN 983) in terms of NEM:AQA (Atmospheric emission which have a significant detrimental effect on the environment) Regulation GN R283, published on 2 April 2015 in terms of NEM:AQA (National Atmospheric Emissions reporting Regulations) (Group C-Mines)	
National Environmental Management Act: Biodiversity Act, 2004 (Act 10 of 2004)	Section 52 of the National Environmental Management Act: Biodiversity Act (NEMBA) Act 10 of 2004) states that the ME/Minister is to list ecosystems that are threatened and in need of protection. Section 53 states that the Minister may identify any process or activity in such a listed ecosystem as a threatening process. A list of threatened and protected species has been published in terms of section 56(1) GG 29657 GNR 151 and GNR 152, Threatened or Protected Species Regulation.	To take note of
National Environmental Management: waste management Act (Act 59 of 2008)	Chapter 4: Waste management activities Regulation GN R 634 published on 23 August 2013 in terms of NEM:WA (Waste Classification and Management Regulations) Regulations GN R921 published on 29 November 2013 in terms of NEM:WA (Categories A to C-Listed activities) National Norms and Standards for the remediation of contaminated land and Soil Quality published on 2 May 2014 in terms of NEM:WA (Contaminated land regulations)	Comply
National Environmental Management Act: Protected Areas act (NEMPAA) Act 57 of 2003) provides for the protection of ecologically viable areas that are representative of South Africa's natural biodiversity and its landscapes and seascapes.	Chapter 2 lists all protected areas.	Take note of

National Water Act, 1998 (Act 36 of 1998)	In terms of the definitions contained in Section 1 of the National Water Act, Act No.36of 1998, a 'water resource' includes a watercourse, surface water, estuary or aquifer. "Aquifer" means a geological formation which has structures or textures that hold water or permit appreciable water movement though them. "Watercourse" means a river or spring; a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may, by notice in the Gazette declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks. The Minister of Water and Environmental Affairs is allowed to regulate activities which have a detrimental impact on water recourse by declaring them to be controlled activities. No person may undertake a controlled activity unless such person is authorised to do so by or under the Act. Duty of Care to prevent and remedy the effects of pollution to water recourse is addressed in Section 19. Section 20 address the procedure to be followed, as well as control of emergency incidents which may impact on a water resource. Recognised water uses are addressed in terms of section 21 and the requirements for registration of water uses are stipulated in Section 26 and 34.	This application does not trigger the application for a Water use Licence..
Nature Conservation Ordinance (Ord 19 of 1974)	Chapters 2,3,4 and 6: nature reserves, miscellaneous conservation measure, protection of wild animals other than fish, protection of Flora	Take note of
In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)	In terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), any person who intends to undertake "any development or other activity which change the character of a site – exceeding 5000m3 in extent" and the "construction of a ….. Linear development or barrier exceeding 300m in length" must at the very earliest stages of initiating the development, notify the responsible heritage resources authority, viz, the South African Heritage Resources Agency and /or Department of Environment.	Consultation included as per previous application to SAHRA
Conservation of Agricultural Resources Act, Act No 43 of 1983	Section 5 of the Conservation of Agricultural Resources Act, Act No 43 of 1983, prohibits the spreading off weeds and Section 6 and Regulation 15 and 15E of GNR 1048 address the implementation of control measures for alien and invasive plant species. This aspect has been addressed in the Environmental Management Programme. This Act also makes provision for the conservation of agricultural land.	Part of Environmental Management Programme
National Forest Act, 190 (Act No. 84 of 1998)	National Forest Act, 190 (Act No. 84 of 1998) and Regulations, Section 7: No person may cut, disturb, damage or destroy any indigenous living tree in a natural forest, except in terms of a license issued under Section 7(4) or Section 23: or an exemption from the provisions of this subsection published by the Minister in the Gazette. Sections 12 – 16 deal with protected trees, with the Minister having the power to declare a particular tree, a group of trees, a particular woodland, or trees belonging to a certain species, to be a protected tree, group of trees, woodlands or species. In terms of section 15, no person may cut, disturb, damage, destroy or remove any protected tree; or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister.	Take note
Subdivision of Agricultural Land Act, Act 70 of 1970	Control the subdivision, and in connection therewith, the use of agricultural land. It also controls long term leases over agricultural land. The applicant needs to apply for consent from the Department of Agriculture for these leases.	Take note

Section 17 of the Fencing Act, Act No.31 of 1983	States that any person erecting a boundary fence may clean any bush along the line of the fence up to 1,5m on each side therefore and remove any tree standing in the immediate line of the fence. However, this provision must be read in conjunction with the environmental legal provisions relevant to protection of flora.	Take note
Section 8 of the Atmospheric Pollution Prevention Act, Act No.45 of 1965	Section 8 of the Atmospheric Pollution Prevention Act, Act No.45 of 1965 regulating controlled areas, as well as section 27, with regard to dust control is still applicable.	Comply
The Occupational Health and Safety Act, Act 85 of 1993 GNR 22810f 1987-10-16	Environmental Regulations for Workplaces are applicable..	Comply
The South African Civil Aviation Regulation Act, Act 13 of 2009.	Controls marking of structures that may influence aviation through the Civil Aviation Technical Standards, SA-CATS-AH 139.01.33 Obstacle Limitations and Markings outside Aerodrome or Heliports. It states that any structure exceeding 45m above ground level, or structures exceeds 150m above the MEAN ground level, like on top of a hill, the mean ground level considered to be the lowest point in a 3km radius around such structure. Structures lower than 45m, which are considered as a danger or a potential danger to aviation, shall be marked as such when specified. Overhead wires, cables, etc., crossing a river, valley or major roads shall be marked and in addition, their supporting towers marked and lighted if an aeronautical study indicate that it constitutes a hazard to aircraft.	Take note
Basic Conditions of Employment Act (Act 3 of 1997) as amended	Entire Act	Comply
Land Survey Act (Act 8 of 1997) and Regulations	To control land surveying, beacons etc.	Take note
Traditional Leadership and Governance Framework Amendment (Act of 2003) and Council of Traditional Leaders (Act of 1997)	These two acts provide for the recognition and establishment of traditional communities and councils and provide a framework for traditional leadership and the roles and responsibilities of this leadership.	The project is located on land under tribal control, the role of the tribal authorities will be particularly important during the stakeholder engagement participation process that will be undertaken.
National Development Plan (NDP)	Development in South Africa is guided by the NDP, which presents a shared long-term strategic framework within which more detailed development planning can take place to advance the long-term goals adopted in the NDP (National Planning Commission, 2011). The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and the reduction of inequality. The NDP 2030 sets a target of creating approximately 11 million new jobs and achieving an annual average economic growth rate of 5.4% by 2030.	The project will create approximately 8 jobs during the course of Mining and emphasis placed on the employment of women.
National Infrastructure Plan	The South African Government adopted a National Infrastructure Plan in 2012. The primary objective of the Plan is to transform the country's economic landscape, while simultaneously creating significant numbers of new jobs, strengthen the delivery of basic services, and promoting integration with other African economies.	To take note of.

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).

Tiger's Eye remain one of the most sought-after minerals in the world. This makes this project very lucrative. The demand currently and for the new future is in the increase due to the Coronavirus pandemic.

The increasing markets in Asia seeking semi-precious stones is ever expanding. Tiger's Eye, Rose Quartz, Tourmaline, Sugilite, Quartz and Aquamarine are precious and semi-precious stones that are in high demand due to the healing and good fortune believe to be characteristic of the stones. The farm location is in an area where Tiger's eye is known to occur. This is confirmed with the applicant having access to the farm and performing work around visual inspection.
It also has the added advantage of providing much needed employment opportunities for the Niekerkshoop town community, which currently does not have any employment opportunities for the local community. The secondary and tertiary spinoffs for the area in terms of the purchase of mining consumables, is an added advantage to do this development.

The National Development Plan (NDP) 2030 provides the context for all growth in South Africa, with the overarching aim of eradicating poverty and inequality between people in South Africa through the promotion of development. Two of the objectives of the NDP are to increase the proportion of adults working in rural areas and reduce the unemployment rate. The proposed project is considered to be in line with the above-mentioned objectives, as outlined in the NDP, as it will facilitate economic activity / growth in rural areas and is conducive to job creation.
The mining operation will provide employment to 8 unskilled employees from the local and surrounding communities of which the labour sending area will be from Niekerskshoop.

Key contribution of the project:

- Creation of employment opportunities to the local community in the mining sector
- BEE suppliers of consumables to the project.
- Engagement of women in mining.
- Ensure the optimal use of mining resources.
- Improve the lack of entrepreneurship in the area.
- Address underutilization of the region's natural resources and economic opportunities.

Positive impact of the continuation of the mining activities include:

- ✓ Employment through the life of the mining program.
- ✓ Skills transfer of employees through training which will be used after the end of lifespan of the mining program; and
- ✓ Poverty Eradication through income

The need and desirability of the proposed mining activities were investigated and assessed based on the DEA (2017), Guideline on Need and Desirability. According to this guideline the concept of "need and desirability" can be explained in terms of the general meaning of its two components in which need primarily refers to time and desirability to place (i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed?), "need and desirability" are interrelated and the two components collectively can be considered in an integrated and holistic manner. the "need" relates to the interests and needs of the broader public.
Mining is the research, planning and development phase of one or more mining projects.
It is the pre-curser to the primary industrial development of mining in a country which forms the foundation for the growth of the secondary manufacturing (including beneficiation), tertiary sector, service, IT and high finance sectors essential to the developing economy such as that of South Africa. By the very nature of a mineral resource, the position of a mine is determined by the occurrence of the natural resource and is often positioned in poorer sectors of the country, which

allows for economic development within these communities. The evaluation of a project aims to determine whether mineralization occurs and if so, does it occur in economically extractable quantities. Initially these are measured in tonnage and grade. While geological studies are integral to mining, mining also includes, amongst others, infrastructural,
environmental, socio-economic, financial evaluation and metallurgical studies thereby encouraging the national research and educational sectors. The application area is situated within the Prieska Tiger's eye region and includes geological known Tiger's eye occurrences. Previous mining has been conducted on the study area.

Analysis of the need of the project

The Northern Cape region is known for its rich mineral deposits and has been an active mining zone in South Africa for various commodities including but not limited to Manganese, Diamond, Gold, Iron Ore and Limestone. The province being an arid area is not preferable for agriculture both the cultivation and livestock farming (although there are some agricultural areas in the province) and also not an ideal residential area because of its desert characteristics. The smaller communities were established in response to an economic activity.
The mining project in the proposed area with no human settlements and active agricultural activities are highly ideal.
The knowledge gap about site economic geology would be closed and thereafter a sustainable land use can be established.

Analysis of the 'desirability' of the project

Mining activities are informed by the existing knowledge regarding buried reserves
and as such there is always a high possibility that after this mining(permit) a mine (right) will be established.

The site is an ideal mining area based on the following aspects:

- No human settlements areas,
- Low environmental sensitivity; and
- High confidence on the presence of ore deposits.

The disturbances will be limited to active areas and sensitive areas marked as a "No-Go". Sensitive environmental areas include wetlands, river systems, graves and dwellings).

Mining itself is a capital-intensive venture and requires the financial commitment of the applicant and in this case is low risk as the tiger's eye deposit is confirmed.

Auxiliary benefits of mining include contributions to local economies, and communities, tax benefits and occasionally royalties.

g) Motivation for the overall preferred site, activities and technology alternative. Due to the previous mining operation on portions of the study area, the geological seam is confirmed. In terms of the archaeological impact, specialist studies have previously been conducted and the archaeological environment is known, and impacts can be managed. This is a low impact operation with minimal destruction to the biological environment and interference with current activities on the farm.

Alternatives considered:
Site: The alternative to the site was to increase the mining area to 5ha, increase production but was not opted for as the period for the mining period would be exceeded in order to mine the total resource on 5ha within the permitted time with the technology. The market demand is currently not established for a greater production tonnage.

Technology: The pick and shovel mining method were considered to achieve the production required which would provide 50 jobs as opposed to the current 8. The cost of that technology would not be economically viable, and the operation would be closed within a 2-month period.

The method of opencast mining with continued backfill will ensure that the rehabilitation process is kept within limitations and manageable.

The "NO GO" alternative as consideration would mean that the status quo remain with now socio-economic benefits to the area and country.

h) Full description of the process followed to reach the proposed preferred alternatives within the site.

NB!! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

i) Details of the development footprint 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 d 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;

The proposed site (a portion of the farm Kafir Krants 379 Portion 3(Nooitverwagt), Magisterial District of Hay, Northern Cape Province), was preferred based on the historical geological data through past mining. It confirmed the presence of the mineral resources.

There are no human settlements within the proposed site which would often create social impacts should resettlement be considered.

NO OTHER SITES WERE ASSESSED.

(b) The type of activity to be undertaken;

The mining activities to be undertaken were assessed and chosen based on site geological setting and economic viability and sustainability for the life of the mining period.

(c) The design or layout of the activity;

The design of the activity in this project refers to the location of the open pit area in relation to the stockpile areas. Historical mining activity has already been undertaken and all infrastructure would be placed and erected in the already disturbed areas.

(d) The technology to be used in the activity.

Technology was assessed to determine which would bring reliable and desirable results. The following factors were evaluated when considering technology:

Mineral Resource burial depth

Technology choice is also based on the depth burial of the targeted stratum. The final

depth of the excavations is dependent on the specific burial depth.

(e) The operational aspects of the activity

Mining activities will be undertaken in 3 different phases of which each is dependent on the preceding phase. Each phase will provide information that will determine whether the mining activities should be continued or abolished.

Desktop Study
It is more of a literature review and research on all the completed work on the area, it also include accruing results from the companies that have already worked on the area.

Field Mapping
This involves the geologist walking the area and making observations which are then recorded on a map.

Mining
The topsoil, where necessary, would be removed and placed in a dedicated stockpile area. Pieter Jacobus Smit (PJS) would conduct its mining operation in the current open excavations and virgin ground.

The topsoil would be removed by means of an excavator where required and placed adjacent to the excavations for later rehabilitation. Excavations would generally be of dimensions 30mx30m. The tiger's eye material would be excavated, had sorted and loaded onto LDV to the container area for final grading area. The final product would be containerized.

Each excavation would be rehabilitated before a new one is opened to properly manage the rehabilitation program.

This activity is the most critical part of the proposed mining activities and therefore the option of not implementing the activity cannot be considered.

Other operational aspects:

Stockpiles
The topsoil where required would be removed and kept on a topsoil stockpile for final rehabilitation of the disturbed area. This will be kept to a minimum as all infrastructure are of a mobile nature and above ground. Final product be kept on a production stockpile already disturbed through past mining. (TOTAL STOCKPILE AREA 500m^2) No specific technology is used other than ensuring no contamination of the topsoil will occur. If this activity is not implemented the mining activities cannot continue fluently affecting the cost effectiveness of the mining operation. The option of not implementing the activity cannot be considered.

Water Storage Facility
The primary operational aspect of the activity is to store water for the mobile toilets and domestic use. Water would be sourced from the farm owner and would amount to 1000l/day.

Mobile Office Site

The office block will be installed and have an approximate footprint of 25m^2. This site will house several units including general office, Mine Health and Safety office and first aid room.

- The office site will be mobile offices fitted with relevant equipment/furniture for its

specific task.

- All administrative activities, storing of files, company financials and discussions will be occurring within this facility.

- The best option is to keep the offices within the mining premises for proper managing, activity regulation, accident and damage control as well as optimizing productivity.

Ablution Facility (5m^2)

Contractual agreements will be made with a service provider and basic flushing chemical toilets installed.
These facilities are to support the sanitation protocol of the mining employees. During the mining operation mobile chemical toilets will be available. Footprint 0.0025ha

The implementation of this structure and related activities is absolutely compulsive and enforced by the Basic Conditions of Employment Amendment Act, 2013 (Act 20 of 2013) in conjunction with the Basic Conditions of Employment Act, 1997 (Act 75 of 1997), Basic Conditions of Employment Amendment Act, 2002 (Act 68 of 2002) and Basic Conditions of Employment Amendment Act, 2003 (Act 52 of 2003). Footprint 0.0025ha

Diesel Storage

No diesel would be stored on site. Diesel would be provided by a diesel bowser. Care should be taken during re-fuelling to avoid spillage and a Standard Operating Procedure developed for refueling of the excavator.

The actual volume of the bowser will be 1000l.

Domestic Waste Facility

The technology used shall be of local municipal standard including a tip-proof and scavenger proof bin. All domestic waste on site will be place within these bins to keep the area clean and litter free.
The option of not implementing the activity cannot be considered and should the activity not be implemented, a greater risk of littering results. (4m^2)

Water requirement:

No water for processing nor dust suppression on roads as the excavator would be on tracks.

Waste Management:

The principle of Reduce, Re-use and Recycle must be always implemented. The waste must be separated at source and disposed off at an appropriate and registered waste management facility.

Access Roads:

Due to the historical disturbance on the property and current farm roads, no new roads need to be established to gain access to the mining site.

(f) The option of not implementing the activity.

The option of not implementing the activity also referred to as a “No-Go” option ensures that the current status quo remains.

Should the project not be authorised the potential socioeconomic benefits associated with

establishing a mine will not be realised.
The local economy is supported by very few economic activities and therefore have very limited job opportunities. The success of mining activities will boost local economy not only through job creation but demand for secondary services as well such as food supply boosting local SMMEs.

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.

The following process for public participation will be undertaken as prescribed by NEMA (EIA Regulations 2014) is in process (PPP)

(1) ADVERTISEMENT

An advert will be placed in a local newspaper (Noordkaap Bulletin) as an invitation to Interested and Affected parties to register on the application database. **APPENDIX A.**

(2) PUBLIC NOTICE BOARD

A noticeboard of minimum dimensions 40cm by 60cm placed at entry to the farms. Notice boards will be placed at the local municipal office, GWK and a supermarket frequented by the community in Niekerkshoop. **APPENDIX B**

(3) PLACEMENT OF ENVIRONMENTAL IMPACT ASSESSMENTREPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

The Draft Basic Assessment and Environmental Management Report will be made available and placed at the local municipal office, GWK and a supermarket frequented by the community for a period of 30 days. **APPENDIX C**

(4) DATABASE OF INTERESTED AND AFFECTED PARTIES

A database of Interested and Affected parties are attached as **APPENDIX D.**

(5) TELEPHONIC CONVERSATIONS

Where necessary, telephonic conversations were held prior to sending out information.

(6) Email CORRESPONDENCE

Emails as a consultation medium will be used where such details are known and preferred to by the participant in the process. Public Participation Document as **APPENDIX E**

(7) ORGANS OF STATE

Hard copies will be hand-delivered or sent by registered mail and proof attached as **APPENDIX F**

(8) PUBLIC AND OTHER INTERESTED AND AFFECTED PARTIES

A Public meeting will be held, the minutes and attendance register kept as part of **APPENDIX G**.

All stakeholders and I&AP's will be notified of the report's availability and to make presentations within 30 days of receipt. Hardcopies of the report have been submitted to affected organs of state and relevant authorities.

iii) Summary of issues raised by I&Aps (POPI ACT APPLIED)

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

INTERESTED AND AFFECTED PARTIES List the names of persons consulted in this column, and mark with an **X** where those who must be consulted were in fact consulted		**DATE COMMENTS RECEIVED**	**ISSUES RAISED**	**EAP's RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT**	**SECTION AND PARAGRAPH REFENCE** in this report where the issues and or response were incorporated
AFFECTED PARTIES					
Landowner/s	**X**				
Title Deed **APPENDIX J**	X	Consultation on-going.			
Lawful occupiers/s of the land					
Representing land owner Nooitevrwag Boerdery BK	X	Consultation on-going.			
Landowners or lawful occupiers on adjacent properties					
	X	Consultation on-going.			
	X	Consultation on-going.			
Municipal councillor					
Municipality: Siyathemba Local Municipality (Niekershoop) Mr. Howard Humphrey Meiring Siyathemba Local Municipality Tel: 0534923420 PO Box 16 Victoria Street Prieska	X	Consultation on-going.			

Northern Cape Hettie 0796479688 howardmeiring1@gmail.com hettie@siyathemba.gov.za					
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWS))					
Head of Department Department Water and Sanitation 053 830 8800/6 7600 Private Bag X6101, Kimberley	X	Consultation on-going.			
Mr. Viljoen Mothibi Department of Agriculture. Land Reform and Rural Development 053 807 4801 Private Bag X5018, Kimberley 8300	X	Consultation on-going.			
The Director Department Cooperative Governance, Human Affairs and Traditional Affairs Private Bag X5005 Kimberley 8300	X				
The Director Department of Environment and Nature Conservation 053 807 7306 Private Bag X6010, Kimberley 8300	X				
Nqabisa Mkalipi Commission on Restitution of Land Rights 053 807 5749 053 807 5700 P O Box 2458, Kimberley 8300 Nqabisa.mkalipi@drdlr.gov.za	X	Consultation on-going. APPENDIX E			
OTHER AFFECTED PARTIES	X	Consultation on-going.			

INTERESTED PARTIES	**X**	Consultation on-going.		
PUBLIC MEETING	Community Member	Consultation on-going.		

iv) The Environmental attributes associated with the alternatives.(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

(1) Baseline Environment (Also see Screening Report APPENDIX H)

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

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

1. Geology

Geology Classification (1:1M)

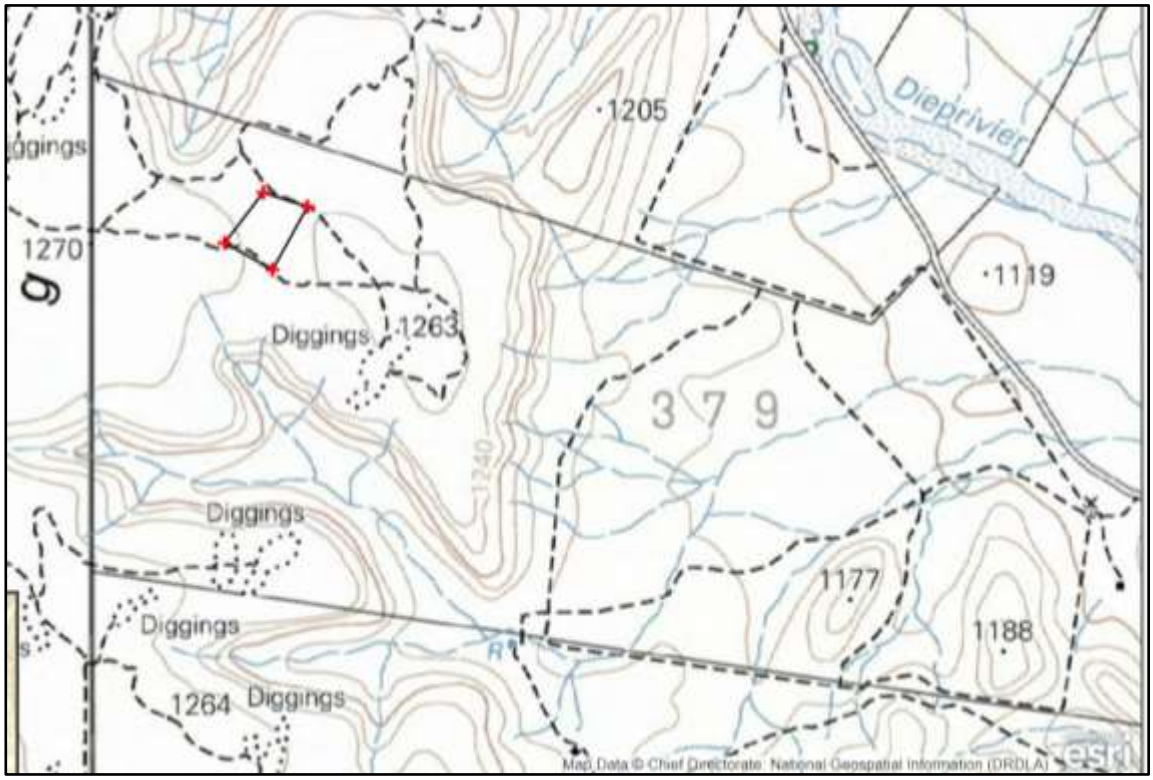
Code:	SDku
Lithostratigraphic:	KURUMAN FORMATION
Lithology:	Banded iron-formation, riebeckite-amphibolite, chert, minor minnesotaite and crocidolite, finely laminated brown to red-brown shale

The project area is situated within the Asbestos Mountains. The topographic can best be described as mountainous with characteristic ravines. The elevation of the area at peak is 1 231 m above sea-level. Topographic altering featuresinclude historic tiger's eye diggings and the R313 public road.

Soils derived from the ancient basement granites and gneisses of the Namaqualand Mobile Belt. Red and yellow apedal, freely draining, young soils dominate most of the area. Deep alluvial soils occur along the Orange River.

Topography

The study area is located between 1240-1260 m above mean sea level.



Biological Environment

This section taken from: Taken from Nama-Karoo Biome E. Pienaar Figure 7.1 NKu 4 Eastern Upper Karoo: Typical Nama-Karoo landscape with tafelbergs and butts in the surrounds of Middelburg (Eastern Cape). S T R E L I T Z I A 19 (2006) Ladislav Mucina, Michael C. Rutherford, Anthony R. Palmer, Susanne J. Milton, Louis Scott, J. Wendy Lloyd †, Bertie van der Merwe, David B. Hoare, Hugo Bezuidenhout, Jan H.J. Vlok, Doug I.W. Euston-Brown, Leslie W. Powrie and Anthony P. Dold

NKu 3 Northern Upper Karoo

NKu 3 Northern Upper Karoo
VT 35 False Arid Karoo (35%), VT 36 False Upper Karoo (27%) (Acocks 1953). LR 50 Upper Nama Karoo (44%), LR 52 Eastern Mixed Nama Karoo (24%) (Low & Rebelo 1996).

Vegetation & Landscape Features
Shrubland dominated by dwarf karoo shrubs, grasses and Acacia mellifera subsp. detinens and some other low trees (especially on sandy soils in the northern parts and vicinity of the Orange River). Flat to gently sloping, with isolated hills of Upper Karoo Hardeveld in the south and Vaalbos Rocky Shrubland in the northeast and with many interspersed pans.

Important Taxa Small Trees:
Acacia mellifera subsp. detinens, Boscia albitrunca. Tall Shrubs: Lycium cinereum (d), L. horridum, L. oxycarpum, L. schizocalyx, Rhigozum trichotomum. Low Shrubs: Chrysocoma ciliata (d), Gnidia polycephala (d), Pentzia calcarea (d), P. globosa (d), P. incana (d), P. spinescens (d),

Rosenia humilis (d), Amphiglossa triflora, Aptosimum marlothii, A. spinescens, Asparagus glaucus, Barleria rigida, Berkheya annectens, Eriocephalus ericoides subsp. ericoides, E. glandulosus, E. spinescens, Euryops asparagoides. Felicia muricata, Helichrysum lucilioides, Hermannia spinosa, Leucas capensis, Limeum aethiopicum, Melolobium candicans, Microloma armatum, Osteospermum leptolobum, O. spinescens, Pegolettia retrofracta, Pentzia lanata, Phyllanthus maderaspatensis, Plinthus karooicus, Pteronia glauca, P. sordida, Selago geniculata, S. saxatilis, Tetragonia arbuscula, Zygophyllum lichtensteinianum. Succulent Shrubs: Hertia pallens, Salsola calluna, S. glabrescens, S. rabieana, S. tuberculata, Zygophyllum flexuosum. Semiparasitic Shrub: Thesium hystrix (d), Herbs: Chamaesyce inaequilatera, Convolvulus sagittatus, Dicoma capensis, Gazania krebsiana, Hermannia comosa, Indigofera alternans, Lessertia pauciflora, Radyera urens, Sesamum capense, Sutera pinnatifida, Tribulus terrestris, Vahlia capensis. Succulent Herb: Psilocaulon coriarium. Geophytic Herb: Moraea pallida.Graminoids: Aristida adscensionis (d), A. congesta (d), A. diffusa (d), Enneapogon desvauxii (d), Eragrostis lehmanniana (d), E. obtusa (d), E. truncata (d), Sporobolus fimbriatus (d), Stipagrostis obtusa (d), Eragrostis bicolor, E. porosa, Fingerhuthia africana, Heteropogon contortus, Stipagrostis ciliata, Themeda triandra, Tragus berteronianus, T. koelerioides, T. racemosus.

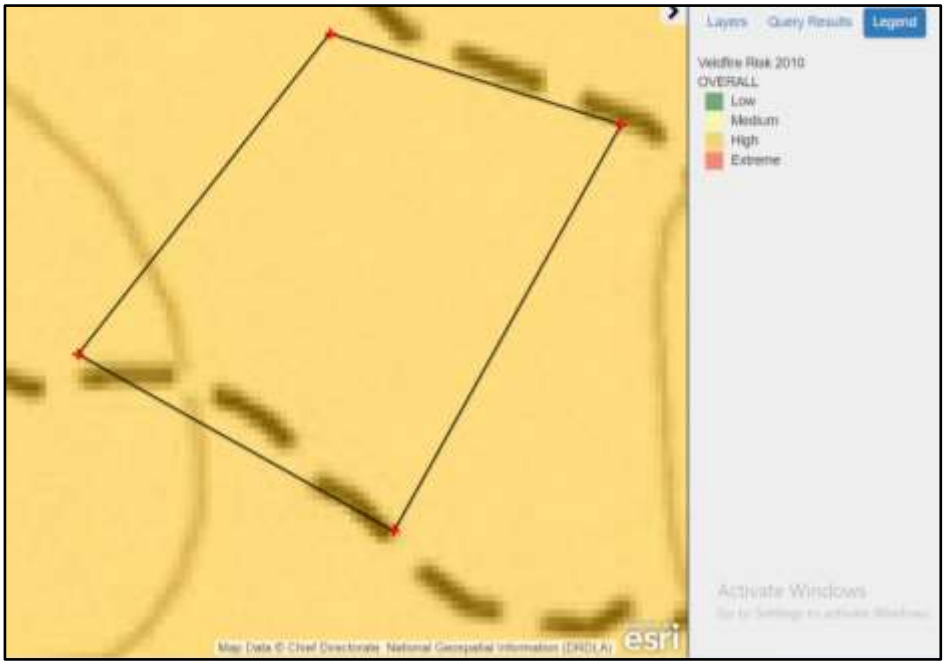
Biogeographically Important Taxa Herb (western distribution limit): Convolvulus boedeckerianus. Tall Shrub (southern limit of distribution): Gymnosporia szyszylowiczii subsp. namibiensis.

Endemic Taxa Succulent Shrubs: Lithops hookeri, Stomatium pluridens. Low Shrubs: Atriplex spongiosa, Galenia exigua. Herb: Manulea deserticola.

Conservation Least threatened. Target 21%. None conserved in statutory conservation areas. About 4% has been cleared for cultivation (the highest proportion of any type in the Nama-Karoo) or irreversibly transformed by building of dams (Houwater, Kalkfontein and Smart Syndicate Dams). Areas of human settlements are increasing in the northeastern part of this vegetation type (Hoffman et al. 1999). Erosion is moderate (46.2%), very low (32%) and low (20%). Prosopis glandulosa, regarded as one of the 12 agriculturally most important invasive alien plants in South Africa, is widely distributed in this vegetation type (Hoffman et al. 1999). Prosopis occurs in generally isolated patches, with densities ranging from very scattered to medium (associated with the lower Vaal River drainage system and the confluence with the Orange River) to localised closed woodland on the western border of the unit with Bushmanland Basin Shrubland. Remark This Karoo unit is found on floristic and ecological gradients between the Nama-Karoo, arid Kalahari savanna and arid highveld grasslands. References Acocks (1953, 1988), Werger (1980), Palmer (1990).

Veldfire Risk

The study area has a high veldfire risk**.**

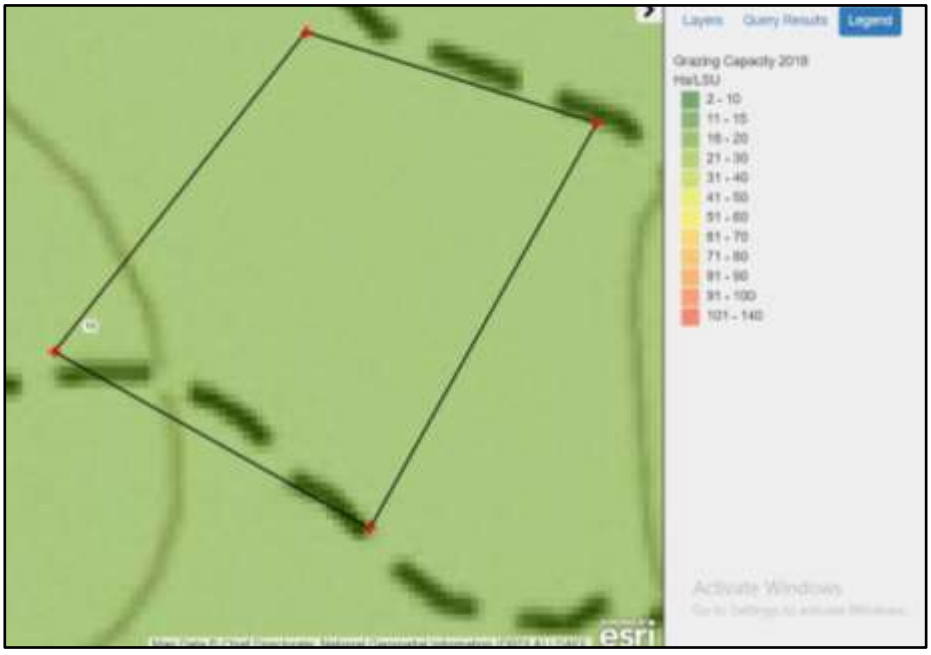


Grazing Capacity

Grazing Capacity of 18 Ha/Large stock unit N1-15 with a low to very low land capability.

Grazing capacity

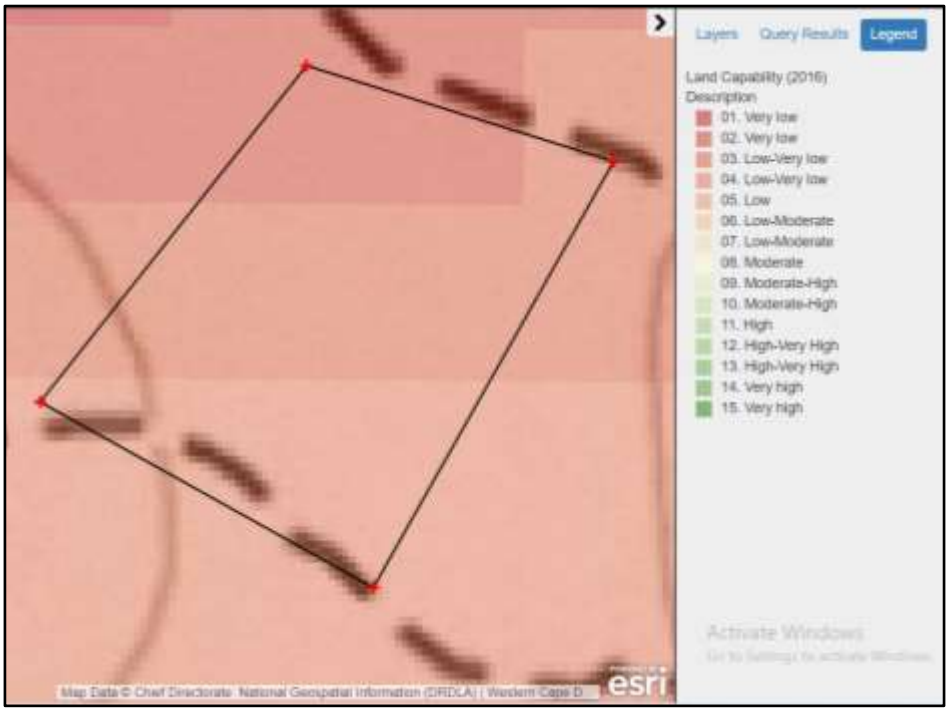
Ha/Large Stock Unit:	18



Land Capability

Land Capability (DAFF 2016)

Land Capability (1-15):	03. Low-Very low
Soil Capability (1-9):	02. Low-Very low
Terrain Capability (1-9):	04. Low-Moderate
Climate Capability (1-9):	03. Low



Source: CFM Agriculture GIS

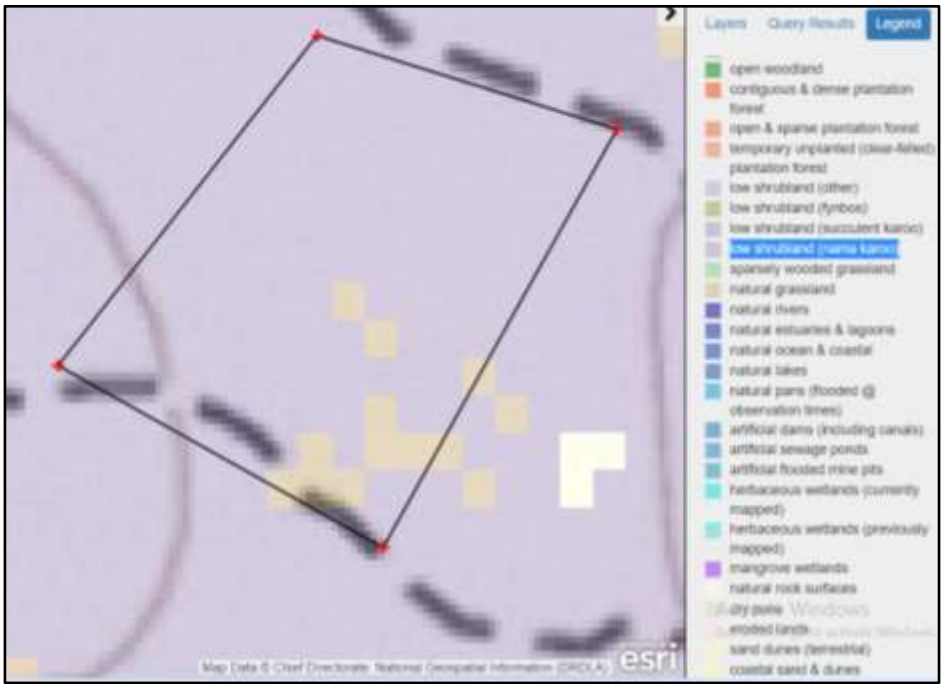
National Landcover 73- class (DEA 2020)

Land cover refers to the surface cover on the ground, whether vegetation, urban infrastructure, water, bare soil or other. It provides a means to examine landscape patterns and characteristics, which are important in understanding: The extent, availability, and condition of lands. Ecological system extent, structure, and condition.

The area of the development:

Land Cover 73-class (DEA, 2020)

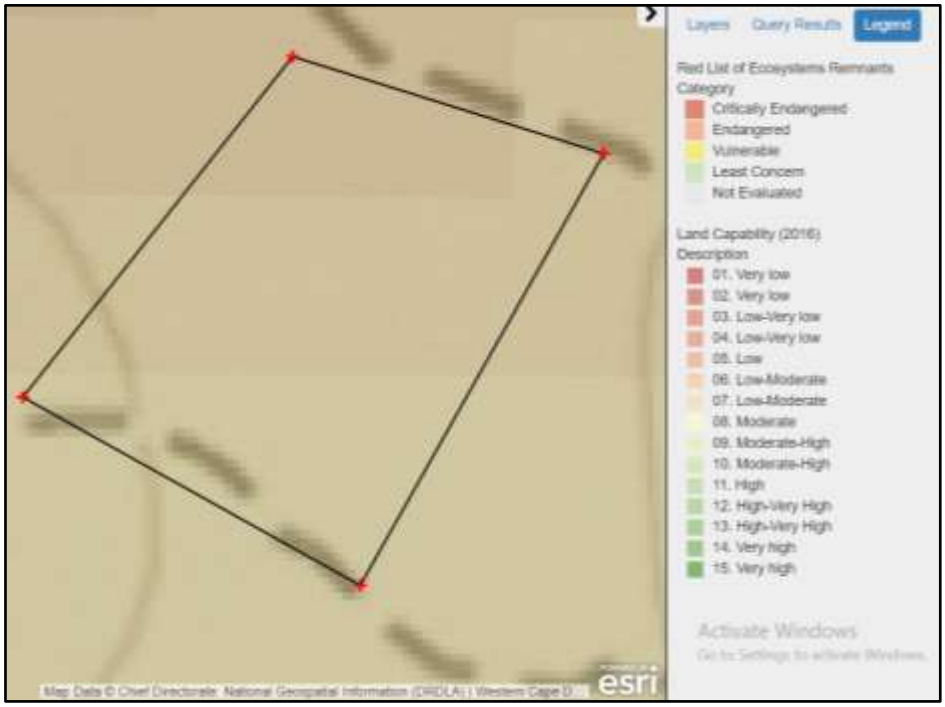
Class:	low shrubland (nama karoo)
Classification Level 1:	Shrubland
Classification Level 2:	Karoo & Fynbos Shubland



Source: CFM Agriculture GIS

SANBI Red List of Ecosystems: Remnants

Name:	Northern Upper Karoo
Bioregion:	Upper Karoo Bioregion
Biome:	Nama-Karoo
Threat Status 2021:	LC
Map Code 18:	NKu3
Global vs National:	Global & National status
Endemism:	Endemic



Water

NFEPA Water Management Area: Lower Orange

Primary Catchment: D

Secondary Catchment: D7

Quaternary Catchment: D71D

Groundwater

Aquifer

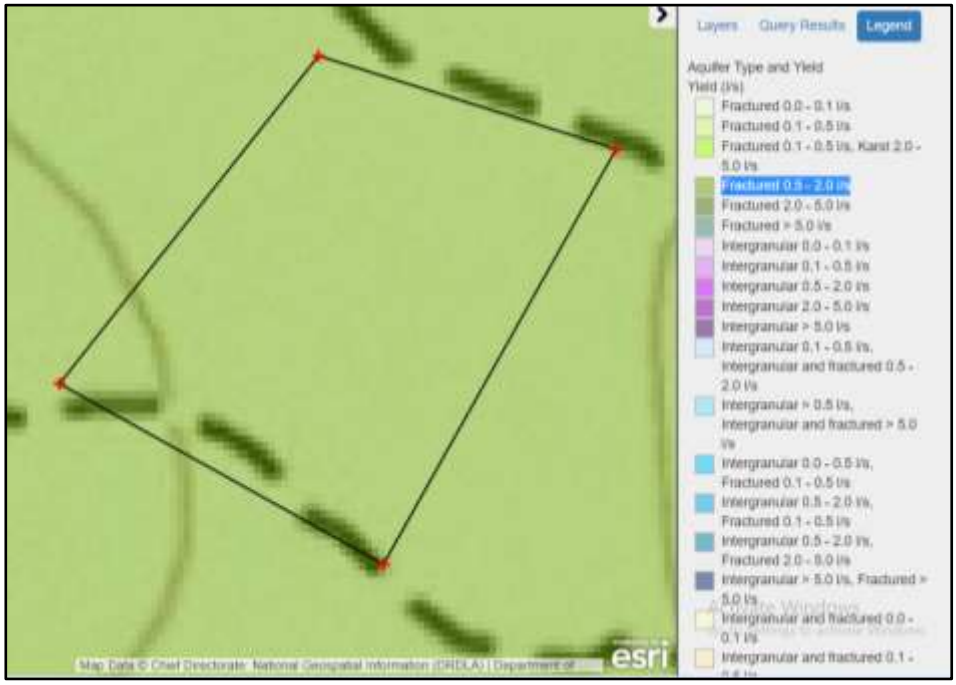
The aquifer is intergranular and fractures with a yield of 0.5-2.0.1l/s.

The classification can be described as minor and a susceptibility classified as medium with moderate vulnerability. Aquifer vulnerability is defined as the likelihood for contamination to reach a specified position in the groundwater system after being introduced at some point above the uppermost aquifer. The vulnerability is determined by evaluating seven parameters, namely:
• Depth to groundwater;
• Recharge;
• Aquifer media;
• Soil media;
• Topography;
• Impact on vadose zone; and
• Hydraulic conductivity.

Aquifer

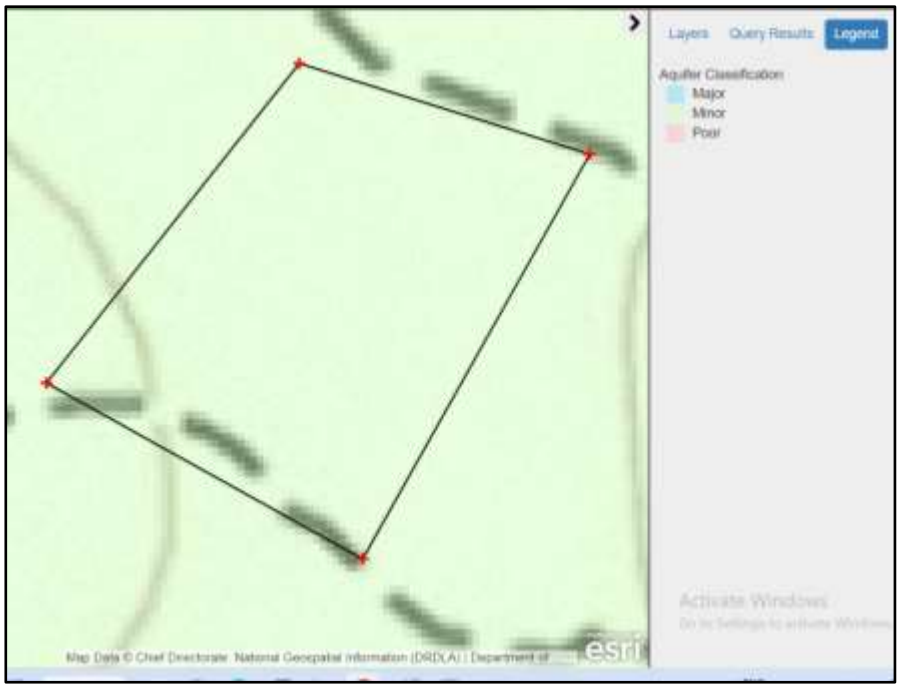
Aquifer Type and Yield

Classification:	Fractured 0.5 - 2.0 l/s



Source: CFM Agriculture GIS

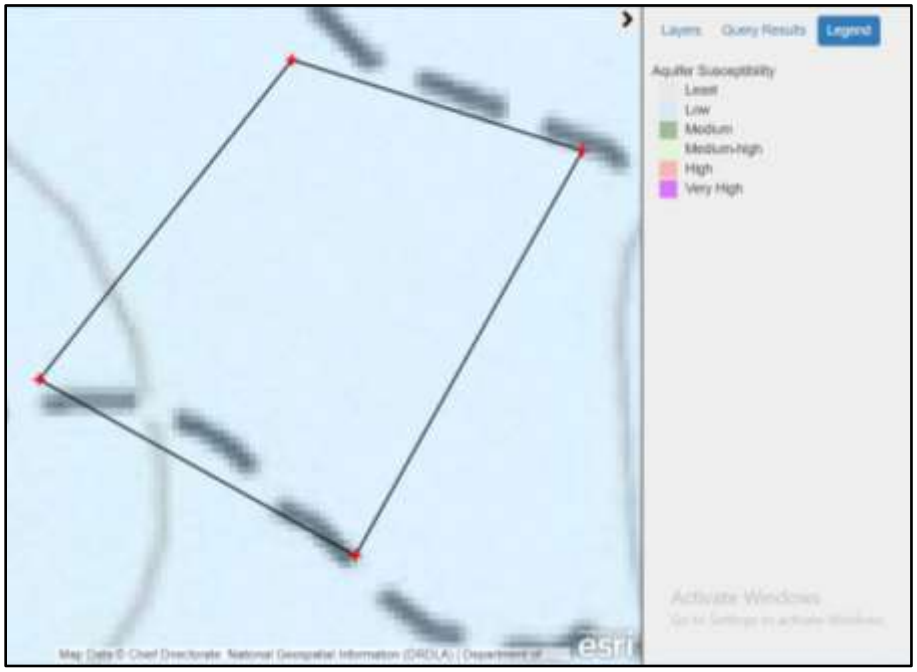
Aquifer Classification-Minor



Source: CFM Agriculture GIS

Aquifer Susceptibility

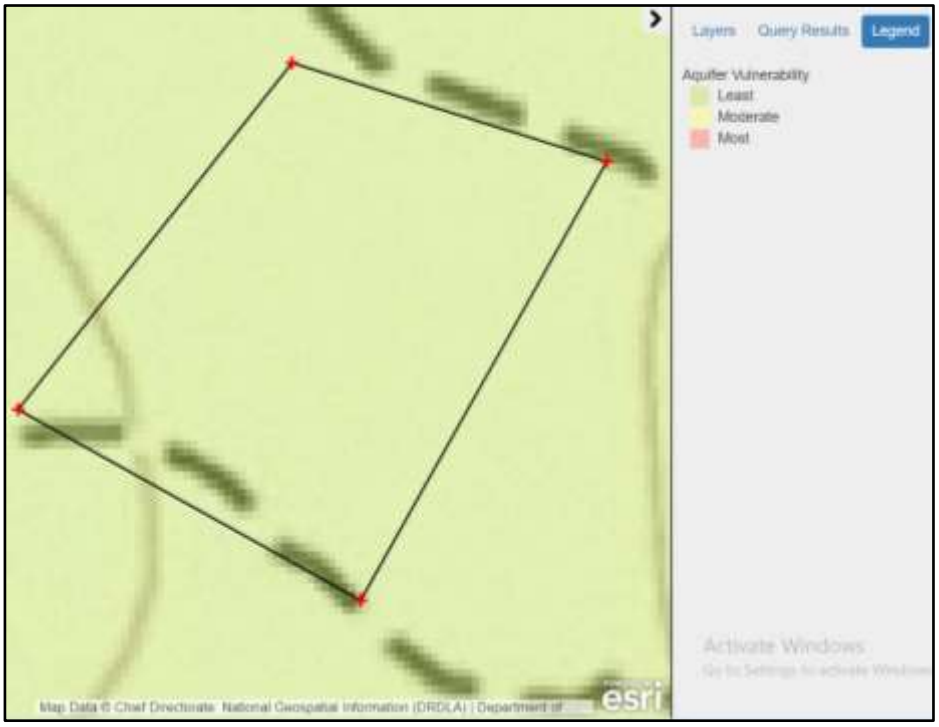
Susceptibility:	Low



Source: CFM Agriculture GIS

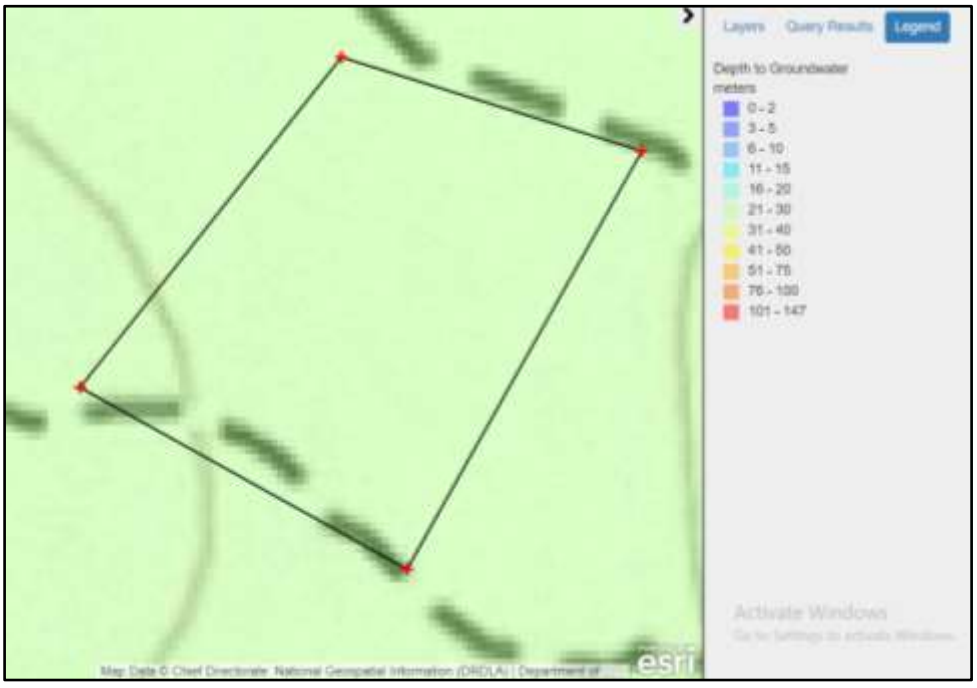
Aquifer Vulnerability

Vulnerability:	Least



Depth to Groundwater

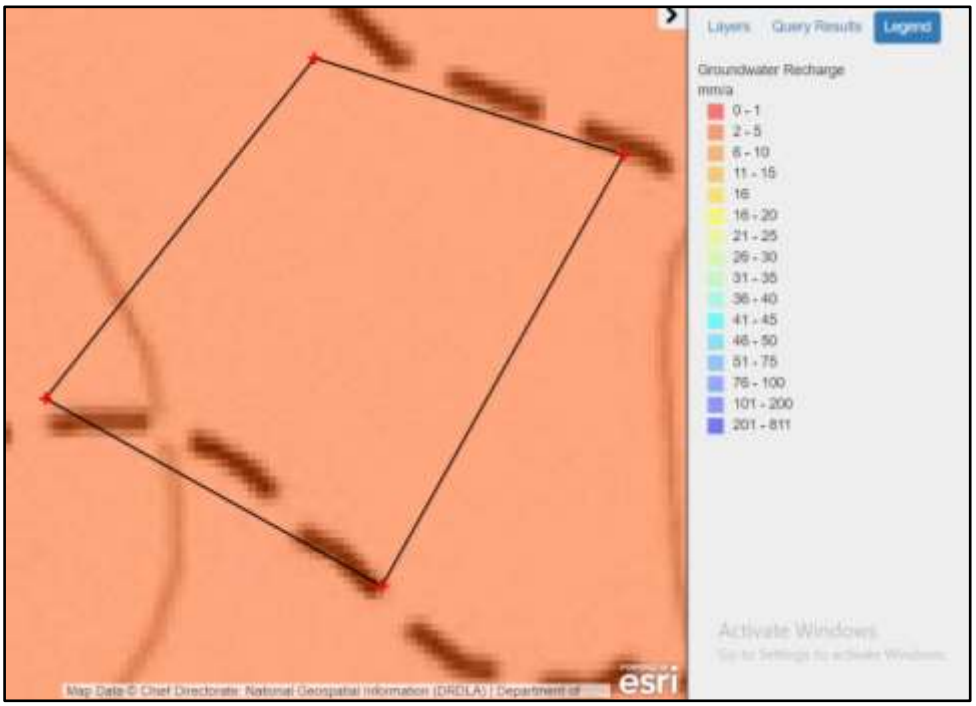
Depth (mbgl):	21.57m



Source: CFM Agriculture GIS

Groundwater Recharge

Recharge (mm/a):	3.48



Depth to groundwater is between 16-20m. Groundwater recharge is 3.48 (mm/a)

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Source: CFM Agriculture GIS

River diversions:

No alteration of any water courses or the natural drainage lines will take place on the site.

Wetlands:

No wetlands occur on the application area.

Pixley Ka Seme District Municipality

Geography, History & Economy

Pixley Ka Seme District Municipality comprises:

- Emthanjeni Local Municipality
- Kareeberg Local Municipality
- Renosterberg Local Municipality
- Siyancuma Local Municipality
- Siyathemba Local Municipality
- Thembelihle Local Municipality
- Ubuntu Local Municipality
- Umsobomvu Local Municipality

MDB code: DC7

Description: The Pixley Ka Seme District Municipality is a Category C municipality situated in the south-east of the Northern Cape Province. It shares its borders with three other provinces, namely the Free State to the east, the Eastern Cape to the south-east, and the Western Cape to the south-west. It is the second-largest district of the five in the province but makes up almost a third of its geographical area. The district is comprised of eight local municipalities: Ubuntu, Umsobomvu, Emthanjeni, Kareeberg, Renosterberg, Thembelihle, Siyathemba and Siyancuma. Its main town is De Aar. Traffic flows through the region, linking the major industrial areas of the country.
The area has a low rainfall, while the largest river in South Africa flows through it. Two of the major dams in South Africa, the Vanderkloof and Gariep Dams, are situated on the borders of the district municipality.

Area: 103 222km²

Cities/Towns: Britstown, Campbell, Carnarvon, Colesberg, Copperton, De Aar, Douglas, Griekwastad, Hanover, Hopetown, Hutchinson, Loxton, Marydale, Niekerkshoop, Norvalspont, Noupoort, Petrusville, Philipstown, Prieska, Richmond, Schmidtsdrif, Strydenburg, Van der Kloof, Vanwyksvlei, Victoria West, Vosburg

Main Economic Sectors: Community services (26.6%), agriculture (16.6%), transport (15.1%), trade (12.9%), finance (12.8%), electricity (7.0%), construction (3.3%), manufacturing (3.2%), prospecting (2.6%)

SOCIO-ECONOMIC ENVIRONMENT

Niekerkshoop is a town in Pixley ka Seme District Municipality in the Northern Cape province of South Africa under the jurisdiction of Siyathemba Local Municipality. Village and asbestos prospecting centre 80 km south of Griquatown and 40 km north of Prieska. It was laid out on the farm Modderfontein in 1902 and has been administered by a village management board since 1904. It was named after the owners of the farm, brothers named Van Niekerk. Niekerkshoop is a small village with dust roads on the R313 between Prieska and Griquatown. Although this is an arid area, the vegetation is changing from Karoo to Kalahari bushveld. The village lies east of the Asbesberg mountain range, and the Gariep (or Orange) River flows about 15Km east of the village.

Siyathemba Local Municipality is a local municipality in the Pixley ka Seme District Municipality in the Northern Cape Province of South Africa. Siyathemba Municipality is aCategory B Municipality (NC077), established in 2001, in accordance with the demarcation process. The municipality is located within the central eastern parts of the Northern Cape Province on the banks of the Orange River and falls within the boundaries of the Pixley ka Seme District. The nearest business centre is Kimberley, which is about 220km away. Siyathemba Municipality was initially made up of three entities, namely, Prieska, Marydale and Niekerkshoop. After demarcation the area was extended to include not only the towns and surrounding suburbs of Marydale, Niekerkshoop and Prieska but also Copperton.The municipal area encompasses ageographic area of approximately 8,200km², which implies that Siyathemba Municipality accounts for 8% of the total district surface area and approximately 3% of the provincial area. The municipality is divided into 4 Wards.

The whole of the Siyathemba area is rich in semiprecious stones. The famed ‘Tiger’s eye’ is one of many gems mined in the region. An opportunity exists for adding value to the raw material and shipping out processed products of high quality. Main economy is agriculture, sustained by irrigation from the Gariep river. Study area with large area characterized by protruding tigers’ eye rocky outcrop.

Demography

Population	21 591
Age Structure	
Population under 15	30.80%
Population 15 to 64	63.20%
Population over 65	6.00%
Dependency Ratio	
Per 100 (15-64)	58.20
Sex Ratio	
Males per 100 females	99.30
Population Growth	
Per annum	1.57%
Labour Market	
Unemployment rate (official)	24.30%
Youth unemployment rate (official) 15-34	30.20%
Education (aged 20 +)	
No schooling	11.50%
Higher education	5.30%
Matric	18.00%
Household Dynamics	
Households	5 831
Average household size	3.60
Female headed households	36.10%
Formal dwellings	88.60%
Housing owned	54.30%
Household Services	
Flush toilet connected to sewerage	64.90%
	73.90%

Agricultural households		
Type of specific activity	Number	
Livestock production	374	
Poultry production	601	
Vegetable production	167	

Production of other crops	505	
Other	139	
Weekly refuse removal		
Piped water inside dwelling		43.10%
Electricity for lighting		86.20%

Unemployment rate	24,3%
Youth unemployment rate	30,2%
No schooling aged 20+	11,5%
Higher education aged 20+	5,3%
Matric aged 20+	18%

Climate

Prieska and Niekerkshoop is considered to have a desert climate. In Niekerkshoop, there is virtually no rainfall during the year. According to Köppen and Geiger, this climate is classified as BWk. The average annual temperature is 17.9 °C in Niekerkshoop. In a year, the average rainfall is 286 mm. The region is the coldest during July when the mercurydrops to 0.3°C on average during the night. The information on climate is more readily available for Prieska and those data is therefor used.

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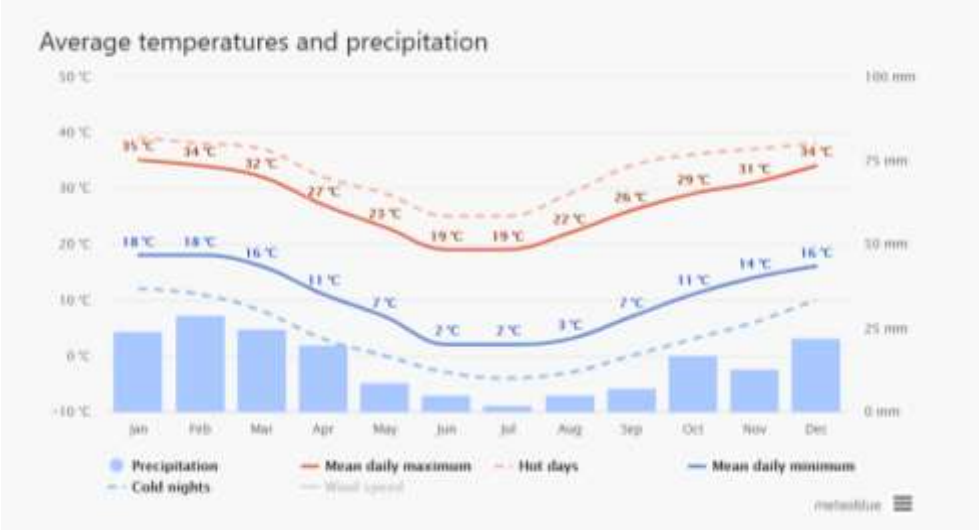
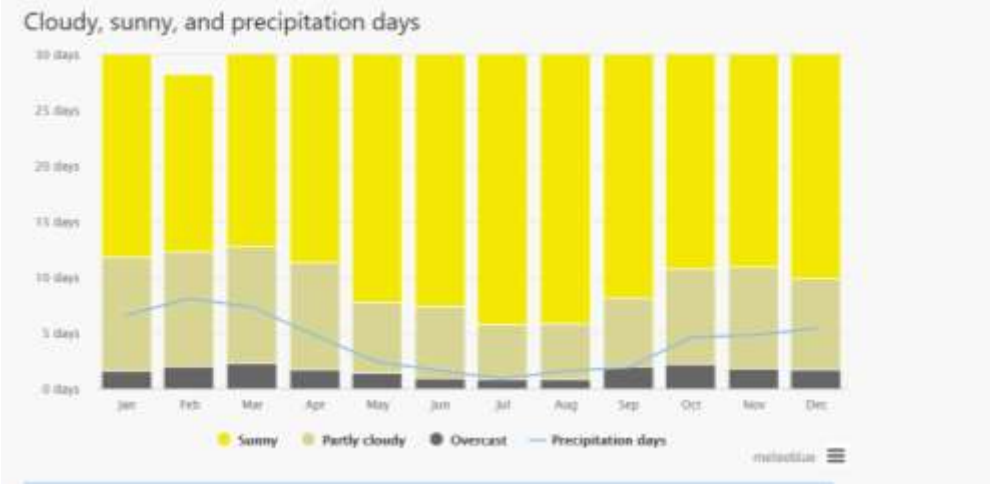
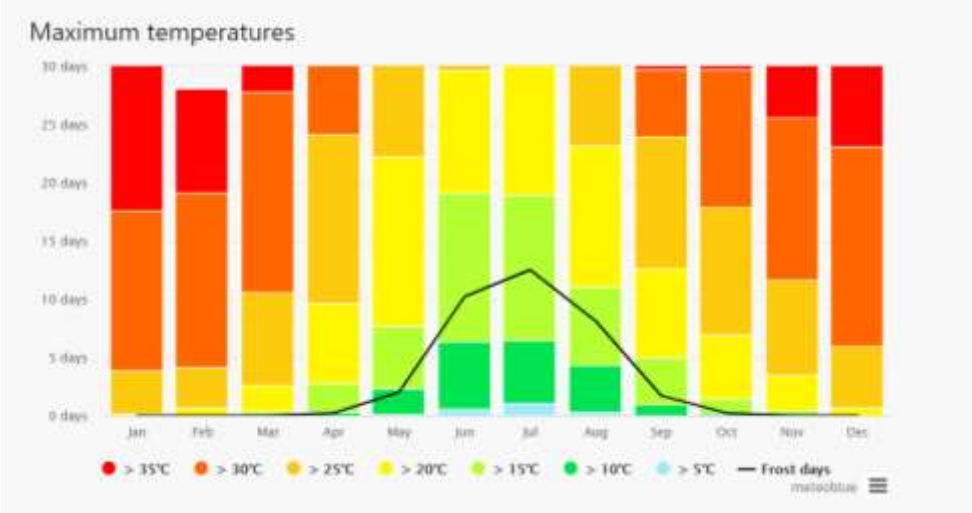
Source Meteoblue



The “mean daily maximum” (solid red line) shows the maximum temperature of an average day for every month for Prieska. Likewise, “mean daily minimum” (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month of the last 30 years.

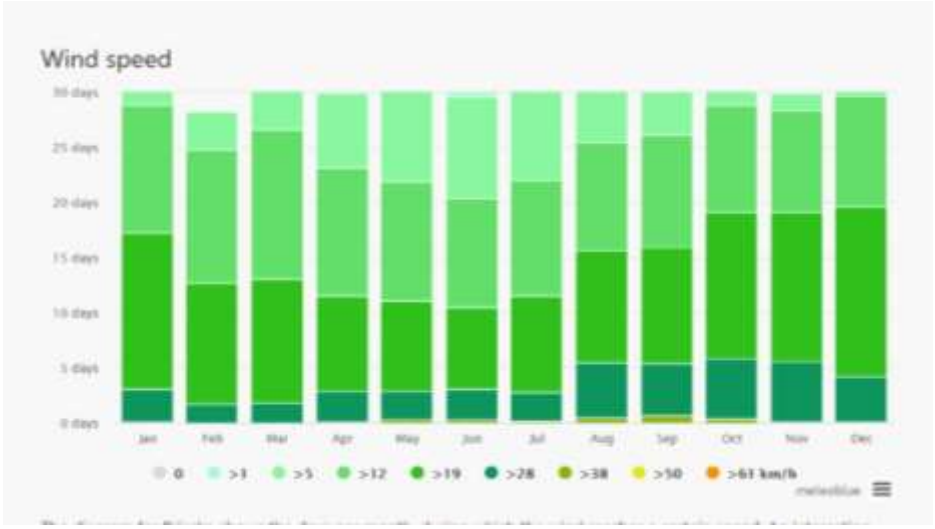


The graph shows the monthly number of sunny, partly cloudy, overcast and precipitation days. Days with less than 20% cloud cover are considered as sunny, with 20-80% cloud cover as partly cloudy and with more than 80% as overcast.



The maximum temperature diagram for Prieska displays how many days per month reach certain temperatures.

The precipitation diagram for Prieska shows on how many days per month, certain precipitation amounts are reached. In tropical and monsoon climates, the amounts may be underestimated.



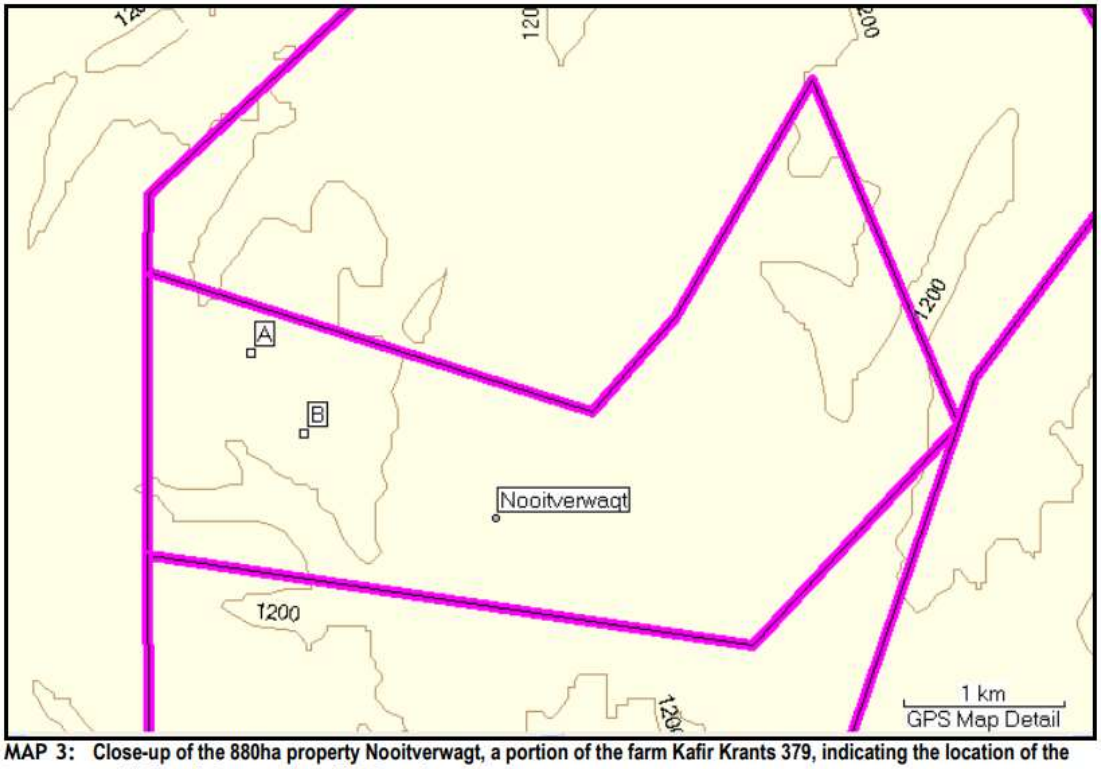
The diagram for Prieska shows the days per month, during which the wind reaches a certain speed.

The wind rose for Prieska shows how many hours per year the wind blows from the indicated direction. Example SW: Wind is blowing from South-West (SW) to North-East (NE).

This section taken from: Phase 1 Archaeological Impact Assessment, (Nooitverwagt Portion of Kafir Krants 379, Hay District, Northern Cape, South Africa, Document reference 2922BD 2006.0004 Prepared by Karen van Ryneveld-National Museum Bloemfontein commissioned by P.J Smit (snr and jnr). Full report as **APPENDIX I**

THE ARCHAEOLOGICAL IMPACT ASSESSMENT

"I visited the site on 2006-08-02. The assessment was limited to a Phase 1 surface survey done by foot. No excavation or sub-surface testing was done since a permit from SAHRA is required to do so. Sub-surface interpretations are based on inspected existing open mining sections. GPS co-ordinates were taken with a Garmin e-trex vista GPS (3-8 m error margin). Photographic documentation was done with a Casio exilim EX-S2 camera. The assessment covered: i. Existing farm roads; and ii. The hill, incorporating both Proposed mining sites (indicated on the map as A and B respectively)"



MAP 3: Close-up of the 880ha property Nooitverwagt, a portion of the farm Kafir Krants 379, indicating the location of the two proposed 1.5ha mining permit applications A and B

An approximate 192 ha area incorporating proposed mining area A (1.5ha) and mining area B (1.5ha) was assessed. The assessment focussed on, and covered the hill on which the developments will be situated. Banded ironstone, the geological basal and primary surface material is at intervals intersected by shallow layers or pockets of Hutton sand. The hill is characterised by a number of digger's pits and dumps, the result of former un-rehabilitated manual mining. A low density of Stone Age artefacts was identified within the assessed area. Observed artefact ratios (artefacts: m²) approximate 1: 64. Artefacts were restricted to the large flat hilltop with little to no artefact occurrences observed on the slopes of the hill. Typologically and technologically artefacts can be ascribed to the Middle Stone Age (MSA) Industrial Complex. Stone tools were produced from yellow jasperlite; an indigenous, but not primary raw material to the area. No artefacts were produced from banded ironstone, probably due to the flake-like quality of the local banded ironstone. Observed MSA fossils directeurs included a number of bladelets and blades as well as a Levallois core. Typologically the majority of artefacts would be classed as irregular scrapers. Limited numbers of cores are ascribed to raw material size.
Artefacts were observed on the exposed basal banded ironstone surface or within shallow Hutton sand pockets.
No faunal or organic material can be associated with the low density surface lithic collection.
• The low quantity of artefacts and their surface / secondary context would prompt me to describe the low density lithic scatter as of Low Significance with a Gereral Protected C field rating (the site does not require further recording before destruction).

CONCLUSION Assessment of the approximate 192ha area, incorporating the two 1.5ha proposed mining areas, Area A and Area B, indicated a low presence of MSA lithic artefacts restricted to the plateau. Typologically and technologically artefacts can be classified as MSA, with a number of MSA fossils directeurs present including a Llevallois core and a number of artefacts produced from prepared flake and blade technology. The majority of artefacts would however be classed as irregular scrapers and flakes. No associated faunal or organic material was observed. Stone tools were exposed on the geological basal

banded ironstone surface or within shallow pockets of Hutton sand. The low quantity of artefacts in association with their secondary / surface context would render the occurrence as of Low Significance with a General Protected C field rating (the site does not require further recording before destruction). Apart from the above-mentioned low density MSA lithic artefact scatter no built structures older than 60 years, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, cultural landscapes or viewscapes or palaeontological deposits that require protection under the NHRA (1999) have been identified.

RECOMMENDATIONS The location of the two proposed 1.5ha mining areas A and B is situated within the assessed 192ha area. I would recommend that development in the assessed area proceed without the developer having to apply for a destruction permit.

APPENDIX F
SAHRA comment and final decision to be uploaded in Final BAR as APPENDIX 1A

(a) Description of the current land uses.

Land in the area and surroundings are mainly used for mining, livestock farming(sheep) and agriculture (crops).

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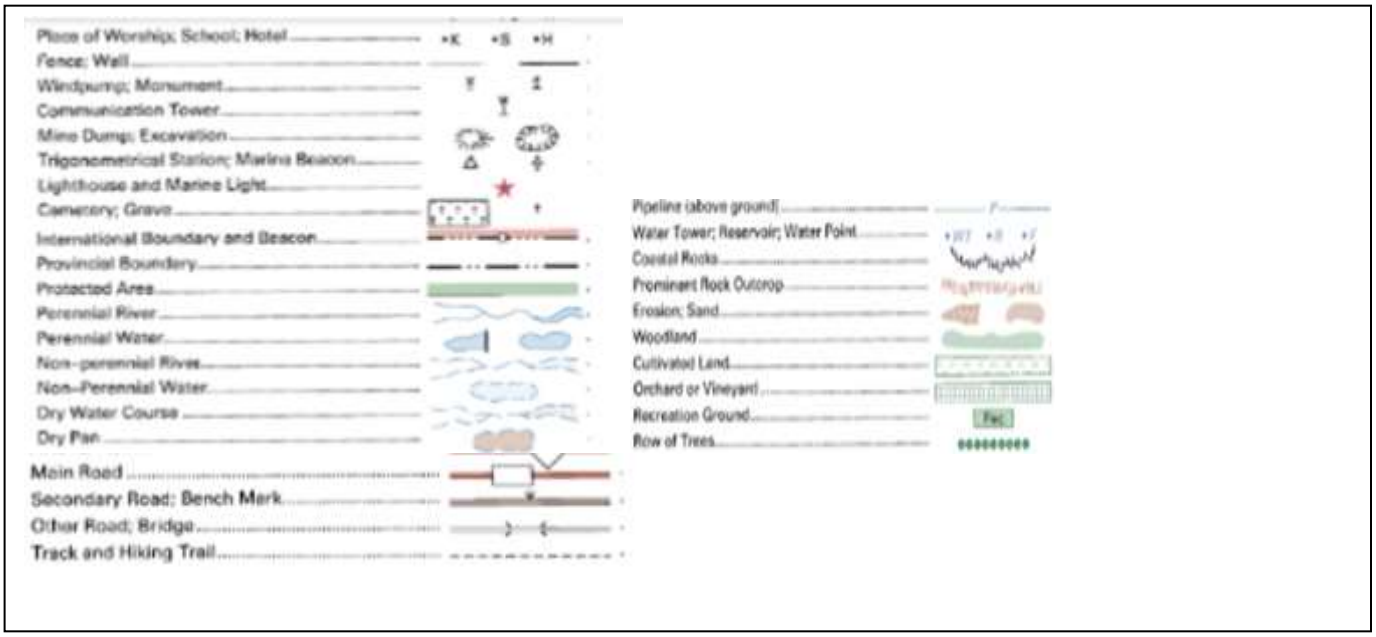
(b) Description of specific environmental features and infrastructure on the site.

Environmental features present include:

Historical digging sites and tracks**.**

Environmental and current land use map.
(Show all environmental, and current land use features)

LEGEND


Place of Worship; School; Hotel
Fence; Wall
Windpump; Monument
Communication Tower
Mine Dump; Excavation
Trigonometrical Station; Marine Beacon
Lighthouse and Marine Light
Cemetery; Grave
International Boundary and Beacon
Provincial Boundary
Protected Area
Perennial River
Perennial Water
Non-perennial River
Non-Perennial Water
Dry Water Course
Dry Pan
Main Road
Secondary Road; Bench Mark
Other Road; Bridge
Track and Hiking Trail
Pipeline (above ground)
Water Tower; Reservoir; Water Point
Coastal Rocks
Prominent Rock Outcrop
Erosion; Sand
Woodland
Cultivated Land
Orchard or Vineyard
Recreation Ground
Row of Trees

v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be mitigated.

(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. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

A list of impacts is hereby provided, a full impact analysis which includes the significance of the impacts, their nature, extent, duration and probability of the impacts.

Nature of Impact	Impact	Positive / Negative / Neutral Impact	Reversibility	Probability	Extent	Duration	Intensity	Significance	Mitigation Rating
CONSTRUCTION / SITE ESTABLISHMENT PHASE									
ACTIVITY:	**DEMARCATION OF SITE WITH VISIBLE BEACONS.**								
Boundary Demarcation	Over boundary mining resulting in loss of heritage resources and wetland pollution.	Neg	Irreversible	2	3	1	8	48	Low to Moderate
ACTIVITY:	**ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN BOUNDARIES OF SITE.**								
Social, Security & Safety	Influx of job seekers to the mining site, which results in a security risk. Unsuccessful job seekers which may informally settle in area. Potential danger to surrounding farmers.	Neg	Reversible	5	1	1	3	21	Low
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies (wetland). Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential impact of mining activities on the runoff and infiltration of storm water.	Neg	Reversible	2	1	1	6	24	Low
Soils	Loss of soil & damage to soil characteristics. Potential hydrocarbon contamination to soils (machinery and equipment).	Neg	Irreversible	2	1	1	6	24	Low
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment.	Neg	Reversible	5	1	1	4	28	Low
Land Use	Veld fire might seriously impact on surrounding land-use of neighbouring farmers. Degrading of grazing potential for livestock farming.	Neg	Reversible	2	3	1	8	48	Low

Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	3	1	1	2	10	Positive
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Neg	Irreversible	1	1	5	10	50	Low
Noise	Noise nuisance caused by mining equipment and machinery during the site establishment phase.	Neg	Reversible	5	3	1	6	48	Low
Air quality	Dust nuisance caused by the disturbance of soil. Dust nuisance due to processing pan plant transfer points. Dust nuisance due to loading and vehicles transporting the material.	Neg	Reversible	5	3	1	8	72	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	1	1	4	28	Low
Fauna	Alienation of animals from the area. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. Impact to nocturnal insects and their predators and other nocturnal animals.	Neg	Reversible	5	3	1	6	54	Low
ACTIVITY: ABLUTION FACILITIES									
Noise	Noise nuisance generated by earthmoving machinery.	Neg	Reversible	5	1	1	2	14	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	1	1	2	10	Low
Soils	Portable Toilets. Potential harm through sewage leaks.	Neg	Reversible	3	1	1	2	8	Low
ACTIVITY: ACCESS ROADS (IF REQUIRED)									
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies (wetland). Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential impact of mining activities on the runoff and infiltration of storm water.	Neg	Reversible	3	1	1	6	24	Low
Soils	Loss of soil & damage to soil characteristics. Potential hydrocarbon contamination to soils (machinery and equipment)	Neg	Reversible	5	1	1	6	42	Low
Noise	Noise nuisance generated by earthmoving machinery.	Neg	Reversible	5	1	1	8	56	Low
Air quality	Dust nuisance caused by the disturbance of soil. Dust nuisance due to road use, loading and vehicles transporting the material.	Neg	Reversible	5	3	1	8	72	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	3	1	4	36	Low
SITE OFFICES									
Hazardous Waste	Potential contamination through littering.	Neg	Reversible	5	1	2	4	32	Low

Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics.	Neg	Reversible	5	1	1	1	7	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	1	1	4	28	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	1	1	4	28	Low
ACTIVITY: REFUELLING									
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table during refueling of equipment. Potential contamination through littering leaching into the groundwater table. Potential hydrocarbon contamination which may reach downstream surface water bodies. (wetland) Potential surface water contamination if leaks escape into the environment. .	Neg	Reversible	5	2	1	6	48	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	3	1	8	64	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	2	1	1	2	8	Low
Noise	Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	1	1	2	14	Low
ACTIVITY: GENERATOR AREA (BUNDED)									
Hazardous Waste	Potential hydrocarbon contamination leaching into the water table during refueling of generator. Potential hydrocarbon contamination which may reach downstream surface water bodies. (wetland) Potential surface water contamination if leaks escape into the environment. .	Neg	Reversible	5	2	1	6	48	Low
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	1	1	6	42	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	1	1	6	42	Low
ACTIVITY: WASTE AREA									
Hazardous Waste	Potential hydrocarbon contamination leeching into the water table. Reduction of local groundwater. Potential contamination through littering leeching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies.	Neg	Reversible	5	2	1	6	48	Low

	Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.								
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	2	1	6	48	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	2	1	8	56	Low to Moderate
Fauna	Alienation of animals from the area. Potential risk to avifauna. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. New habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.	Neg	Reversible	5	3	1	8	72	Low to Moderate
ACTIVITY:	**STRIPPING AND STOCKPILING OF TOPSOIL FOR MINING (MINIMAL REQUIRED)**								
Hazardous Waste	Contamination of area with hydrocarbons or hazardous waste materials.	Neg	Reversible	3	2	1	4	24	Low
Soils	Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	4	1	1	4	24	Low
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	Neg	Reversible	5	1	1	4	28	Low
Topography	Alteration of topography.	Pos	Irreversible	5	2	1	10	80	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	Neg	Reversible	2	1	1	10	40	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	2	1	10	80	Low to Moderate
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Neg	Irreversible	2	5	1	10	80	Low to Moderate
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	2	1	8	56	Low
Air quality	Dust generation.	Neg	Reversible	5	2	1	8	56	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	2	1	8	56	Low
Fauna	Alienation of animals from the area. Potential risk to avifauna.	Neg	Reversible	5	2	1	8	56	Low

	Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. New habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.								
OPERATIONAL PHASE									
ACTIVITY:	**MINING (EXCAVATIONS)**								
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	5	2	1	8	64	Low
Hazardous Waste	Contamination of area with hydrocarbons or hazardous waste materials.	Neg	Reversible	5	2	1	8	64	Low
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	Neg	Reversible	5	2	3	8	80	Low
Topography	Alteration of topography.	Pos	Irreversible	5	2	1	8	64	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	Neg	Reversible	5	2	1	8	64	Low
Visual aspect	Deterioration in visual aesthetics of the area.	Neg	Reversible	5	3	1	8	72	Low to Moderate
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Neg	Irreversible	2	5	1	10	80	Low to Moderate
Air quality	Dust generation.	Neg	Reversible	5	3	1	8	72	Low
Fauna	Alienation of animals from the area. Potential risk to avifauna. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. New habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.	Neg	Reversible	5	3	2	8	80	Low to Moderate
Surface water	Potential hydrocarbon contamination leeching into the water table. Reduction of local groundwater. Potential contamination through littering leeching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the	Neg	Reversible	3	3	1	8	56	Low

	environment. Potential impact of mining activities on the runoff and infiltration of storm water.								
Groundwater	Potential hydrocarbon contamination leeching into the water table. Reduction of local groundwater. Potential contamination through littering leeching into the groundwater table	Neg	Irreversible	3	4	1	10	80	Low
Social & Safety	Potential danger to landowner. Unsafe working environment for the employees. Safety risk posed by unslopped areas.	Neg	Reversible	3	4	1	10	80	Low
Dust	Dust nuisance caused by the disturbance of soil. Dust nuisance due to loading and vehicles transporting the material. Dust nuisance due to landscaping activities.	Neg	Reversible	5	3	1	8	64	Low
Archaeological & cultural sites	Loss of and disturbance to surface archaeological sites.	Neg	Irreversible	3	5	1	10	90	Low
Noise	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	Neg	Reversible	5	3	1	10	90	Low
Air quality	Dust generation.	Neg	Reversible	5	3	1	10	90	Low
Air quality	Emissions caused by vehicles and equipment.	Neg	Reversible	5	3	1	10	90	Low
ACTIVITY:	**HANDSORTING**								
Health and Safety	Falling into excavations. Cuts and bruises during hand sorting. Injury due to sorting in proximity of excavator whilst operational.	Neg	Reversible	5	3	1	8	64	Low
DECOMMISSIONING PHASE									
ACTIVITY:	**SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**								
Soils	Potential compaction of soils in neighbouring areas. Potential contamination through littering. Potential for loss of soil & damage to soil characteristics. Initial increased potential for loss of soils and soil erosion. Potential hydrocarbon contamination to soils.	Neg	Reversible	4	2	4	10	100	Low
Soils	Soils replaced and ameliorated.	Pos	Reversible	4	2	4	10	100	Low
Flora	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	Neg	Reversible	3	2	3	10	100	Low
Topography	Alteration of topography.	Pos	Irreversible	5	2	5	10	120	Low
Land Use	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming. (Low)	Neg	Reversible	3	2	4	10	110	Low
Visual aspect	Improved aesthetics through rehabilitation.	Pos	Reversible	5	2	5	10	120	Low to Medium
Noise	Noise nuisance caused by drilling, machinery for stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery.	Neg	Reversible	5	1	1	2	14	Low

	Noise nuisance generated during the landscaping phase.								
Air quality	Dust nuisance caused by the disturbance of soil. Dust nuisance due to loading and vehicles transporting the material. Dust nuisance due to drilling and landscaping activities.	Neg	Reversible	5	1	1	2	14	Low
Fauna	Reintroduction of fauna attracted to flora to the area.	Pos	Reversible	5	3	5	10	130	Low
Fauna	Reintroduction of fauna attracted to flora to the area.	Pos	Reversible	5	3	5	10	130	Low
Groundwater	Potential hydrocarbon contamination leeching into the water table. Reduction of local groundwater. Potential contamination through littering leeching into the groundwater table. Potential silt-loading of drainage lines, downstream, and surrounding water bodies. Potential hydrocarbon contamination which may reach downstream surface water bodies. Potential surface water contamination if leaks escape into the environment. Potential impact of mining activities on the runoff and infiltration of storm water.	Neg	Reversible	5	3	2	10	100	Low
APPLICATION FOR CLOSURE									

Cumulative Impact Assessment

Cumulative effects are caused by the accumulation and interaction of multiple stresses affecting the parts and the functions of ecosystems. Of particular concern, is the knowledge that ecological system sometimes changes abruptly and unexpectedly in response to apparently small incremental stresses. For purposes of this report, cumulative impacts have been defined as “the changes to the environment caused by an activity in combination with other past, present, and reasonably foreseeable human activities”.

Generally, as the sites are in non-existence and no major additional environmental impacts are expected, the cumulative impacts will generally be of medium significance.

Nature of Impact	Impact	Positive/Negative / Neutral Impact	Reversibility	Extent	Duration	Intensity	Probability	Significance	Mitigation

Traffic & Safety	Increased potential for road incidences.	Neg	Reversible	4	3	2	2	15	All intersections with roads will be clearly signposted. .
Noise	The noise impact should be contained within the boundaries of the property and will represent the current noise levels of the farm.	Neg	Reversible	2	3	3	4	16	**Noise Handling:** Trucks, machinery, and equipment will be regularly serviced to ensure acceptable noise levels are not exceeded. Point sources will be enclosed where possible. Silencers will be installed where possible. Screens will be considered if I&AP complaints are received. The Applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site No loud music may be permitted at the mining area. All mining vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996). Best practice measures will be implemented in order to minimize potential noise impacts. A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method, as well as NEM: AQA, 2004, SANS 10103:2008.
Air quality	Increased dust generation will impact on the air quality of the receiving environment.	Neg	Reversible	3	3	3	4	17	**Dust Handling:** During periods of high wind spells, the stockpiles must be dampened to control dust emission. The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. The liberation of dust into the surrounding environment must be effectively controlled by the use of, inter alia, water spraying, and / or other dust-allaying agents that contains no PCB's (e.g. DAS products). The site manager must ensure continuous assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. Speed on the haul roads must be limited to 20km/h to prevent the generation of excess dust. Roads must be sprayed with water or an environmentally friendly, dust-allaying agent that contains no PCB's (e.g. DAS products) if dust is generated above acceptable limits. Areas devoid of vegetation, which could act as a dust source, must be minimize and vegetation removal may only be done immediately prior to mining. The fallout dust monitoring system to be placed at PJS. All dust generating activities will comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM: AQA (Act 39 of 2004), and ASTM D1739 (SANS 1137:2012). Activities will be minimize during extreme windy days, where the weather conditions will be considered during the operation of the quarry. Best practice measures will be implemented during the stripping of topsoil and transporting of material from site to minimize potential dust impacts.
Air quality	Emissions will be contained within the property boundaries and will therefore affect only the landowner.	Neg	Reversible	3		3	4	17	**Emission Handling:** All vehicles will be regularly serviced to ensure they are in proper working condition and to reduce risk of excessive emissions

i) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

(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).

Methodology used in determining and ranking nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks. The impacts were individually described and assessed using the criteria drawn from the Environmental Impact Assessment (EIA) Regulations, published by the DEA in terms of the NEMA (Act 107 of 1998). The significance of each impact is assessed using the following formula (before and after mitigation): Significance Point (SP) = (Probability + Extent + Duration) x Intensity

The significance of the impacts was determined through the consideration of the following criteria:

Probability (5):	Provides a description of the likelihood/probability of the impact occurring
Extent (5):	Describes the spatial scale over which the impact will be experienced
Duration (5):	The period over which the impact will be experienced
Intensity (10):	The degree/order of magnitude/severity to which the impact affects the health and welfare of humans and the environment
Significance (150):	Overall significance of the impact on components of the affected environment and whether it is a negative or positive impact

SP > 75	Indicates **high** environmental significance	An impact that could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates **moderate** environmental significance	An impact or benefit which is sufficiently important to require management and which could have an influence on the decision unless it is mitigated.
SP < 30	Indicates **low** environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.

REVERSIBILITY	**Reversible**	Impacts can be reversed through the implementation of mitigation measures
	Irreversible	Impacts are permanent and can't be reversed by the implementation of mitigation measures

MITIGATION RATING	**MITIGATED Degree impact can be mitigated**	High	*Impact 100% mitigated*
		Moderate	*Impact >50% mitigated*
		Low	*Impact <50% mitigated*

Cumulative: In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area. Indicated as a **Y**es or **N**o.

Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
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.)	(Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)		In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	If not mitigated	(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. Remedy through rehabilitation	If mitigated
DEMARCATION OF SITE WITH VISIBLE BEACONS.	Over boundary mining resulting in loss of heritage resources, loss of biodiversity and wetland pollution.	N/A	Construction / Site Establishment phase	High	Clear demarcation	Low to moderate
ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN BOUNDARIES OF SITE.	If the infrastructure is established within the Boundaries of the approved mining area, no impact could be identified.	N/A	Construction / Site Establishment phase	N/A	N/A	N/A
ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN BOUNDARIES OF SITE.	Portable Toilets Potential harm through sewage leaks.	Loss of topsoil will affect the rehabilitation of the processing area and the future agricultural / grazing potential of the site.	Construction / Site Establishment phase	Low-Med	<u>Control:</u> Storm water management. Site Management. Soil Management.	Low

ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN THE BOUNDARIES OF THE SITE. **STRIPPING AND STOCKPILING OF TOPSOIL** **MINING** **SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**	Deterioration in visual aesthetics of the area.	The visual impact may affect the aesthetics of the landscape.	Operational & Decommissioning Phase	Low-Med	<u>Control:</u> Implementation of proper housekeeping.	Low-Med
	Dust nuisance caused by the disturbance of soil. Dust nuisance due to loading and vehicles transporting the material. Dust nuisance due to landscaping activities.	Increased dust generation will impact on the air quality of the receiving environment.		Med	<u>Control:</u> Dust suppression methods. Proper housekeeping.	Low
	Emissions caused by vehicles and equipment.	Emissions will be contained within the property boundaries and will therefore affect only the landowner.		Low-Med	<u>Control:</u> Emissions	Low
	Noise nuisance caused by machinery stripping and stockpiling the topsoil. Noise nuisance generated by earthmoving machinery. Noise nuisance generated during the landscaping phase.	The noise impact should be contained within the boundaries of the property and will represent the current noise levels of the farm.		Low	<u>Control:</u> Noise control measures. Proper housekeeping methods.	Low
ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN THE BOUNDARIES OF THE SITE. **STRIPPING AND STOCKPILING OF TOPSOIL** **MINING** **SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**	Loss of biodiversity. Potential damage to vegetation in neighbouring areas. Alien invasive encroachment. Potential loss of protected or red data plant species.	This will impact on the biodiversity of the receiving environment.	Site Establishment & Operational phase	Low-Med	Control & Remedy: Implementation of weed control and weed / invader plant. Management plan Implement good housekeeping practices. Adhere to the recommendations made by the botanist.	Low-Med

ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN THE BOUNDARIES OF THE SITE. **STRIPPING AND STOCKPILING OF TOPSOIL** **MINING** **SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**	Alteration of topography.	Topography.	Operational phase	Low-Med	N/A	Low-Med
ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN THE BOUNDARIES OF THE SITE. **STRIPPING AND STOCKPILING OF TOPSOIL** **MINING** **SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**	Loss of and disturbance to surface archaeological sites.	Artefacts or graves.	Operational phase	Low	<u>Control:</u> Survey area before site clearance.	Low
ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN THE BOUNDARIES OF THE SITE. **STRIPPING AND STOCKPILING OF TOPSOIL** **MINING** **SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**	Alienation of animals from the area. Potential risk to avifauna. Potential harm through littering. Loss of food, nest sites, and refugia. Hindrance to nocturnal animals and change in behaviour of nocturnal prey and predators. A new habitat available to fauna in the area and reduced activity should result in influx of animals to the area. Impact to nocturnal insects and their predators and other nocturnal animals.	The impact of the fauna of the area will not be significant as vibration and noise will drive the fauna away.	Operational phase	Med	<u>Control:</u> Implementation of fauna protection measures.	Low

ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN THE BOUNDARIES OF THE SITE. **STRIPPING AND STOCKPILING OF TOPSOIL** **MINING** **SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)**	Veld fire might seriously impact on surrounding land-use (livestock / irrigation of neighbouring farmers). Degrading of grazing potential for livestock farming.	Land use.	Operational phase	Low-Med	Control: Fire	Low
ESTABLISHMENT OF TEMPORARY BUILDINGS AND INFRASTRUCTURE WITHIN BOUNDARIES OF SITE	Influx of job seekers to the mining site which results in a security risk. Unsuccessful job seekers which may informally settle in area. Potential danger to surrounding farmers.	Social.	Construction / Site Establishment phase	Low-Med	Control through proper site management.	Low-Med
SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)	Soils replaced and ameliorated.	Loss of topsoil will affect the rehabilitation of the processing area and the future agricultural potential of the site.	Decommissioning phase	Med	Control: Storm water management. Site Management. Soil Management.	Low-Med
SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)	Reintroduction of fauna attracted to flora to the area.	Fauna returning to area.	Decommissioning phase	Low-Med	Control: Implementation of fauna protection measures	Low
SLOPING, LANDSCAPING AND REPLACEMENT OF TOPSOIL OVER DISTURBED AREA (FINAL REHABILITATION)	Improved aesthetics through rehabilitation.	The visual impact may affect the aesthetics of the landscape.	Decommissioning phase.	Low-Med	Control: Implementation of proper housekeeping	Low-Med

ii) 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)

POSITIVE IMPACTS

Employment Opportunities: This operation will require the employment of a Excavator operator. 8 people would be employed during the mining operation. The town of Niekerkshoop is situated near the operation, and this operation will create employment to the local community.
PJS will place emphasis on the employment of women, the youth and people with disability.
SMME Support: The mining operation will require consumables for the operation which can be sourced from SMME's.
Training and Development: It is a requirement from the DMRE-Mine Health and Safety Inspectorate that training should be provided to operators. This training should be conducted by accredited trainers and assessors. This allows the operator to be semi-skilled and be employed in other sectors of the mining industry.
Increase in the Disposable income for the area: The employment will increase the disposable income for the area.
Revenue Generated to the State and Local authorities:
PJS will have to pay taxes and levies to the State and the Local authorities.

NEGATIVE IMPACTS

Generation of waste: The mining activities will generate both the general and hazardous waste. The waste will be managed using the "triple R" principle, Reduce, Reuse and Recycle.

Introduction of Alien Invasive Plants on site: Invasive plants flourish where there is disturbances and ecological imbalances. The clearing of vegetation to establish drill pads and benches has the potential to attract invasive alien plants.

Criminal activities: Crime in South Africa is a social challenge faced by almost everyone, the presence of mining machinery and equipment on site will attract criminals who would seek to steal and sell such equipment.
A lucrative commodity for thieves is the steal of diesel as it is easily sellable.

Noise Generation: The site is located just over 15 kilometers from Niekerkshoop and the impact would be negligible. The operation of the machinery will create noise which would impact on the farm owner. The impact, however, would be minimal due to the distance and the fact that the operation would be conducted between 07:00 to 17:00.

Dust Pollution: During the whole mining period including site establishment, construction, operation and closure, the machines will create dust.

Loss of biodiversity: The mining activities will have an impact on the biodiversity.

Soil Contamination and disturbance to Soil structure: The mining method which will be employed will have an impact on the soil structure as it will have to be removed. Contamination can occur during the removal of the topsoil and successive soil layers and could further be contaminated by the oil, grease, diesel and hazardous substances spillage.

Influx of labour to site: The locals who are under severe economic conditions will flux to site seeking employment, this may also result in security threats to the operation. Influx of employment seekers from other areas of different culture might also frequent the site and the surrounding towns adding to cultural conflicts.

Traffic: The operation will minimally contribute to the increase in traffic for the current road and transport infrastructure. This will be through the transport of the employees to the mining site and transport of final product.

iii) 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).

Noise: The mining operation will be carried out during the day between 7:00 a.m. to 17:00; This must be eliminated through the engineering design of plant and equipment and the yellow machines fitted with silencer and planned maintenance performed.

Influx of labour to site: Labour will be sought from the town of Niekerkshoop only.

Clearing of vegetation: Vegetation clearing must be limited to working areas only and a vegetation clearing method statement signed off by a qualified environmental professional must always be onsite and its specifications adhered to;

Visual Impact: The portable ablution facilities, water tanks and any other infrastructure should be acquired with consideration for colour, natural earth, green and mat black options which will blend in with the surrounding area must be favoured;

Dust generation: Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed;

Waste management: A system will be implemented, and sufficient waste bins will be provided on-site. The respective waste bins should be clearly identifiable. An employee environmental site induction should be conducted to address all controllable environmental impacts and create general awareness.

Water: Water requirement for the operation is limited to domestic use inclusive of the mobile toilet facility.

Wildlife: The working areas must be barricaded to prevent access by wildlife, and no hunting will be allowed on site and animals found onsite must be rescued and relocated outside the working areas; No snares and traps will be allowed;

Health and Safety: All Health and Safety measures required by the DMRE should be enforced in the open pit and related mining areas. The pitting operations must comply with the safety measures as required by the DMRE in the Mine Health and Safety Act.

Soil Impact Management: When establishing stockpiles, it will be erected in demarcated areas to avoid contamination and erosion through wash off. The stockpiles will be shaped to divert stormwater around the working areas. Stockpiled topsoil will be used during rehabilitation activities.

Traffic: Limit construction activities to the daytime and use establishment routes as far as possible. Drivers obey all the rules of the road and ensure an open channel of communication with the surrounding road users to act proactivity on possible issues.

Consult with the relevant roads agency to determine whether PJS must contribute to road maintenance or alterations due to increase traffic on the roads. Access to the operation must be through current roads and clear signage will be erected to warn road users of heavy vehicle presence.

(ix) Motivation where no alternative sites were considered.

The proposed mining area is targeted as the historical mining operation confirmed the presence of tiger's eye seams.

There is sufficient open area with no human settlements that could possibly create conflicts with any landowners;

The site is located outside any environmental sensitive areas such as protected or critical biodiversity areas;

Mining outside the current boundary will negatively impact on the historical significance of the area.

iv) Statement motivating the alternative development location within the overall site.
(Provide a statement motivating the final site layout that is proposed)

The site layout is mainly influenced by the distribution of the targeted geological stratum; however, the mining site is also influenced by its accessibility and environmental sensitivity. Thus, the pit sites are located away from all water drainages.

a) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. **(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)**

In order to identify the potential impacts associated with the proposed mining activities the following steps were undertaken:

(a) Stakeholder consultation

The stakeholder consultation process is currently undertaken in a manner to be interactive, providing landowners and identified stakeholders with the opportunity to provide input into the project. This is a key focus, as the local residence has capabilities of providing site specific information, which may not be available in desktop research material. Stakeholders are requested to provide their views on the project and any potential concerns which they may have. All comments and concerns are captured and formulated into the impact assessment.

(b) Desktop study

A detailed desktop investigation was undertaken to determine the environmental setting in which the project is located. Based on the desktop investigations various resources were used to determine the significance and sensitivity of the various environmental considerations. The desktop investigation involved the use of:

- South African National Biodiversity Institute (SANBI) Biodiversity Geographic Database LUDS system;
- Geographic Information System base maps;

- Department of Agriculture GIS (CFM) such as the ground water vulnerability report;
- Municipal Integrated Development Plan; and
- Municipal Strategic Development Framework

(c) Site Visit

A site visit was conducted to perform the Basic Assessment Report.

Impacts assessment, rating and management

The ratings of the identified impacts were undertaken in a quantitative manner as provided in the Impact Assessment Section. The ratings were undertaken in a manner to calculate the significance of each of the impacts. The EAP also assesses the outcomes of the calculation to determine whether the outcome reflects the perceived and the actual views; The identification of management measures is done based on the significance of the impacts and measures that have been considered appropriate and successful, specifically as Best Practical and Economical Options.

i) Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):-

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where appliPJSle)	REFERENCE TO APPLIPJSLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
This section taken from: Phase 1 Archaeological Impact Assessment, (Nooitverwagt Portion of Kafir Krants 379, Hay District, Northern Cape, South Africa, Document reference 2922BD 2006.0004 Prepared by Karen van Ryneveld-National Museum Bloemfontein commissioned by P.J Smit(snr and jnr). Full report as APPENDIX G	The location of the two proposed 1.5ha mining areas A and B is situated within the assessed 192ha area. I would recommend that development in the assessed area proceed without the developer having to apply for a destruction permit.	X	Impact statement

j) Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment.

- The site lies within the Nama Karoo Bioregion.
- The area of disturbance will be limited to the mining site and as such the impacts can be managed, minimized and/or completely be prevented.
- The mining operation will have minimal impact to the water sources as the use is limited to domestic use.
- The operation will be undertaken on a historically disturbed area and will have low environmental impact.
- Mining activities will have a significant impact on the socioeconomic status of the local community (Positive).
- The mining site is located outside town or residential areas, the noise and visual impacts will have negligible significance.
- No protected or endangered species are in the study area. (Red Book)
- Mining should be confined to within the site boundary to avoid negative impact to heritage resources.

(ii) Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers.

Figure 19: Final Site Map

(iii) Summary of the positive and negative implications and risks of the proposed activity and identified alternatives;

Kindly see page 70 above

k) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

The proposed impact management objective is to create an environmentally sustainable mining operation by the management, remediation or elimination of the environment impacts through the implementation and adherence of mitigation measures as legislatively required.

- **Avoid at Source:** Reduce at Source: avoiding or reducing at source through the design of the Project (e.g., avoiding by siting or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity).

- **Abate on Site:** add something to the design to abate the impact (e.g., pollution control equipment, traffic controls, perimeter screening and landscaping).

- **Abate at Receptor:** if an impact cannot be abated on-site then control measures can be implemented off-site (e.g., noise barriers to reduce noise impact at a nearby residence or fencing to prevent animals straying onto the site).

- **Repair or Remedy:** some impacts involve unavoidable damage to a resource (e.g. agricultural land and forestry due to creating access, work camps or materials storage areas) and these impacts can be addressed through repair, restoration or reinstatement measures.

- **Compensate in Kind; Compensate Through Other Means:** where other mitigation approaches are not possible or fully effective, then compensation for loss, damage and disturbance might be appropriate (e.g., planting to replace damaged vegetation, financial compensation for damaged crops or providing community facilities for loss of fisheries access, recreation and amenity space).

Impact management objectives:

- Provide sufficient information to strategically plan the mining activities as to avoid unnecessary social and environmental impacts.
- Provide sufficient information and guidance to plan the mining activities in a
- manner that would reduce impacts (both Social and Environmental) as far as practical.
- Ensure an approach that will provide the necessary confidence in terms of environmental compliance.
- Provide a management plan that is effective and practical for implementation.

Through the implementation of the proposed mitigation measures, it is anticipated that the identified social and environmental impacts can be managed and mitigated effectively. Through the implementation of the mitigation and management measures it is expected that:

- Noise impacts can be managed through consultation and through the restriction of operating hours;
- The pollution of soil and water resources can be effectively managed through containment;
- Ecological impact can be managed through the implementation of pollution prevention measures, minimized land clearing, restricting working hours (faunal disturbances) and rehabilitation.
- Concerns regarding access control to the farm can be managed through the development and ensuring compliance to an appropriate access control procedure and

a surface use agreement with the landowner for the use of the access road.

- Risks associated with crime can be mitigated through avoiding recruitment activities on site as well as monitoring and reporting.

- Visual impacts can be minimized through giving consideration to stockpiles construction and placement infrastructure placement and materials used.

l) Final proposed alternatives.

(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment)

The final layout was done with due consideration of the following factors:

Site sensitivity for environmental features.
The highest probability of defining the mineral resource with the mining program.
Placement of infrastructure to avoid any contamination to any water sources.
The least disturbance to the natural Fauna and Flora on the farms.
The proximity of the mineral resource to the hand sorting area to minimize the development of access and on-mine roads.
The placement of infrastructure would have the minimum negative impact on the geology, topsoil, landscape, noise and air pollution.

m) Aspects for inclusion as conditions of Authorisation.

Any aspects which have not formed part of the EMPr that must be made conditions of the Environmental Authorisation.

Any aspects which have not formed part of the EMPr that must be made conditions of the Environmental Authorisation.

No activities, with the exception of the soil sampling, may take place within 32m from any watercourse;

The mining activities should be restricted to daytime.

All wastes generated must be disposed of at an appropriate registered landfill and disposal certificate be kept on site.

Clearing of vegetation should be limited to the working areas only.

n) Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

If any assumptions, uncertainties, and gaps in knowledge arise during the operation, mitigation measures would be taken to eliminate any damage to the environment. The relevant Department would be notified in the event of such an occurrence.

o) Reasoned opinion as to whether the proposed activity should or should not be 79inimize79d.

Reasons why the activity should be authorized or not.

It is my opinion that the activity be 79inimize79d as the effect of positive impacts far outweigh the negative. The operation proof to have a positive effect on the socio-economic conditions of the region. There is no reason why the activity should not be authorized. The disturbance on biodiversity can be fully reversed once the mining activities ceases;

The site is located outside sensitive and protected areas with no critical areas, the site is also dry with very few surface drainage; and

The acquire geological knowledge will contribute significantly to the academic world towards mapping of South African geology based on the mining results.

i) Conditions that must be included in the authorisation

(1) Specific conditions to be included into the compilation and approval of EMPr

The applicant must institute a programme for air quality monitoring and the results thereof submitted to the DMRE, Northern Cape.

All wastes generated must be disposed of at an appropriate registered landfill and disposal certificate be kept on site;

An annual performance must be undertaken throughout the duration of the mining activities;

The financial provision must be reviewed annually to determine if it's still appropriate to site activities;

A complaints register must be kept on site, recording each complaint and how it was addressed.

An Environmental Compliance Officer to be appointed.

(2) Rehabilitation requirements

None other than the implementation of the EMPr with particular reference to the mitigation measures as stipulated within the EMPr.

p) Period for which the Environmental Authorisation is required.

5 Years (inclusive of renewal periods)

q) Undertaking

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic assessment report and the Environmental Management Programme report.

An undertaken by the EAP and the client is provided for in Section 2 of the EMPr.

r) Financial Provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

i) Explain how the aforesaid amount was derived.

The rehabilitation cost will be determined by using DMR guideline. The estimation of rehabilitation cost is R44889.73 due to the Mining activities conducted. The financial provision quantum guarantee will be paid at the DMRE rehabilitation account to cover the rehabilitation and/or management of negative environmental impacts.

No	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighing factor 1	E=A*B*C*D Amount Rands
1	Dismantling of processing plant and structures	m^3	0	17.69	1	1	
2(A)	Demolition of steel buildings and structures	m^2	0	246.34	1	1	
2(B)	Demolition of reinforced concrete buildings and structures	m^2	32	360.98	1	1	11551.36
3	Rehabilitation of access roads remain for future use	m^2	0	43.81	1	1	
4(A)	Demolition and rehabilitation of electrical railway lines	$2m^2$	0	425.44	1	1	
4(B)	Demolition and rehabilitation of non-electrical railway lines	m^2	0	232.05	1	1	0
5	Demolition of housing and/or administration facilities (mobile)	m^2	48	489.9	1	1	23515.2
6	Opencast rehabilitation including final voids and ramps	ha	0.009	249335,1	1	1	2244.01
7	Sealing of shafts and inclines	m^3	0	131,5	1	1	
8(A)	Rehabilitation of overburden and spoils	ha	0,009	171208,4	1	1	1540.87
8(B)	Rehabilitation of processing waste deposits and evaporation ponds(non-polluting potential)	ha	0	213184	1	1	0
8I	Rehabilitation of processing waste deposits and evaporation ponds(polluting potential)	ha	0.009	619241.3	1	1	5573.17
9	Rehabilitation of subsided areas	ha	0	143361.3	1	1	
10	General surface rehabilitation	ha	0,024	26500	1	1	183.11
11	River diversions	ha	0	135625.9	1	1	
12	Fencing	m	0	154.7	1	1	
13	Water management	ha	0	51568.8	1	1	
14	2 to 3 years of maintenance and after care	ha	1	18049.08	0	1	0
15(A)	Specialist study	sum				1	
15(B)	Specialist study	sum				1	
					Subtotal		39034.55
Preliminary & General				15% of subtotal if less than R100 M			5855.18
Contingency 10%							
				Grand Total			44889.73

ii) **Confirm that this amount can be provided for from operating expenditure**.
(Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Mining Work Programme as the case may be).

Confirmed by Pieter Jacobus Smit

s) Deviations from the approved scoping report and plan of study.

i) **Deviations from the methodology used in determining the significance of potential environmental impacts and risks.**
(Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made, and a brief description of the extent of the deviation).

None

ii) **Motivation for the deviation.**

No deviation

t) 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 Mining 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 mining activities will contribute to the local economy via its impact on job creation, total disposable income, and value-added activities. The operation would

further support local businesses in Niekerkshoop for the supply of mining consumables.

Five measures of economic impacts can be defined to demonstrate the positive effect of the proposed operation on the local economy.

- The employment opportunities created.
- The income that employees would derive.
- The CAPEX spent on fixed assets.
- The monthly operational expenditure for consumables (OPEX)
- Revenue- the total value of sales arising from the sale of Industrial minerals.

(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 Mining 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 mining operation would be confined to the study are of historical mining

of which the surface archaeology is known.

v) 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)**.

(i) Investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity:

Part A and Part B

(ii) Investigation of mitigation measures to keep adverse consequences or impacts to a minimum:

Part A and Part B

(iii) Investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act;

Part A

(iv) Reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information:

Part A

(v) Investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;

Part B

(vi) Consideration of environmental attributes identified in the compilation of information and maps contemplated in subsection (3);

Part A

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

a) Details of the EAP, (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in the Environmental Authorisation Application)

Confirmed by M A Goliath

b) Description of the Aspects of the Activity (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in A, section (1)(h) herein as required).

Confirmed by M A Goliath

c) Composite Map

(Provide a map **(Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)

Final Map after all consultations

d) Description of Impact management objectives including management statements

i) **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)

- Closure Objectives:
- The main objective would be to leave the environment in the same state as before.
- To prevent sterilization of ore reserves.
- To prevent the erection of permanent structures.
- Establish self-sustainable vegetation growth.
- To limit and rehabilitate any erosion features and prevent any damage to the soil capacity.
- To limit and manage the visual impact.
- Ensure the health and safety of all humans and animals that may beaffected by the activities.
- The last closure objective is that the mine is closed efficiently, cost effectively and in accordance with government policy.

ii) **Volumes and rate of water use required for the operation.**

The operation would require about 1000 liters per day.

iii) **Has a water use licence been applied for?**

The applicant will source water from the farm owner for the domestic use.

iv) Impacts to be mitigated in their respective phases.

Measures to rehabilitate the environment affected by the undertaking of any listed activity.

ACTIVITIES **(E.g. For mining –** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. For mining**, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offic es, ablution, stores, workshops, processing plant, storm w after control, berms, roads, pipelines,pow er lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place. State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure).	**SIZE AND SCALE of Disturb ancece** (volumes, tonnages and hectares orm²)	**MITIGATION MEASURES** (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply w ith any prescribed environmental management standards or practices that have been identified by Competent Authorities)	**TIME PERIOD FOR IMPLEMENTATION** Describe the time period w hen the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:- .. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond mining as the case may be.
Site Establishment	Construction phase	2448m^2	Dust suppression by meansof water spraying. Rehabilitation, Ripping of compact ground. Seeding with indigenous plant. Speed limits of 30km per hour	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles Will be done.	1 month
Temporal Roads construction	Construction on phase	Grading required of current road	Dust suppression by means of water spraying. Roads will be ripped to a	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles	1 month

			depth of 300mm in order to allow vegetation growth	will be done.	
Mining	Operational phase	0.9 ha Opencast Bench Mining	Dust suppression by means of water spraying. Dust fall-out buckets. Topsoil will be spread on topto allow plant succession. Site Access restriction Monitoring. Drip trays placed under each stationary equipment. Seeding with indigenous plant. Speed limit of 30km/h. Labelled Waste containers. Vegetation will be protectedby avoiding unnecessary clearance and by using existing roads at all times. No poaching allowed. Comply with occupational noise regulations of the Occupational Health and Safety Act, Act 85 of 1993. Provide ear plugs for noise pollution.	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.	Month 3-48
Decommissioning	Decommissi	1ha	All infrastructure removed	Compliance with NEMA,	Last Phase

and final rehabilitation	oning phase		from site Waste will be disposed of at licenced facilities. Any contaminated soils will be cleaned and rehabilitated. All compacted surfaces willbe ripped to a depth of 300mm. The successful establishmentof vegetation is important to ensure the return of animalsin the area. If succession does not take place, a seeding programme in consultation with the ecologist should be implemented	NWA, MPRDA, NEM:WA and the NEMA principles Will be done.	

e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplate d in paragraph ();

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, pow er 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…)**	**ASPECTS AFFECTED**	**PHASE** In which impact is anticipated **(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)**	**MITIGATION TYPE** **(modify, remedy, control, or stop) through (e.g. noise control measures, storm – w ater 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** • **Remedy through rehabilitation.**	**STANDARD TO BE ACHIEVED** **(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.**
Site Establishment	Dust and noise Vegetation disturbance	Air and noise Pollution. Fauna and Flora	Construction phase	Dust suppression by means of water spraying. Rehabilitation, Ripping of compact ground. Seeding with indigenous plant. Speed limits of 30km per hour	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA Principles will be done.
Temporal Roads construction	Dust and noise Vegetation disturbance	Air and noise Pollution. Fauna and Flora	Construction phase	Dust suppression by means of water spraying. Roads will be ripped to a depth of 300mm in order to allow vegetation growth	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.
Temporal storage of hydrocarb	Surface and ground water contamination	Contamination	Operational	Demolishing of cement slabs and bund wall during decommissioning phase	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.

Mining and Mineral Processing	Dust and noise Vegetation disturbance Drainage	Air and noise Pollution. Fauna and Flora Drainage pattern	Operational phase	Dust suppression by meansof water spraying. Dust fall-out buckets. Concurrent rehabilitation will be done by backfilling the trenches. Topsoil will be spread on top to allow plant succession. Site Access restriction Monitoring. Drip trays placed under each stationary equipment. Seeding with indigenous plant. Speed limit of 30km/h. Labelled Waste containers. Vegetation will be protectedby avoiding unnecessary clearance and by using existing roads at all times. No poaching allowed. Comply with occupational noise regulations of the Occupational Health and Safety Act, Act 85 of 1993. Provide ear plugs for noise pollution.	Compliance with NEMA, NWA, MPRDA, NEM:WA , MPRDA and the NEMA principles will be done.
Decommissioning and	Dust and noise	Air and noise Pollution.	Decommissioning phase	All infrastructure removed from site	Compliance with NEMA, NWA,

final rehabilitation	Vegetation disturbance Drainage. Surface and ground water Contamination	Fauna and Flora Drainage pattern. Surface and ground water contamination		Waste will be disposed of at licenced facilities. Any contaminated soils willbe cleaned and rehabilitated. All compacted surfaces willbe ripped to a depth of 300mm. The successful establishment of vegetation is important to ensure the return of animals in the area. If succession does not take place, a seeding programme in consultation with the ecologist should be implemented	MPRDA, NEM:WA and the NEMA Principles will be done.

f)

Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes co ntemplated in paragraphs land (d) will be achieved).

ACTIVITY whether listed or not listed.	**POTENTIAL IMPACT**	**MITIGATION TYPE**	**TIME PERIOD FOR IMPLEMENTATION**	**COMPLIANCE WITH STANDARDS**
(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, pow er lines, conveyors, etc…etc…etc.).	**(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc….etc…)**	**(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** **Remedy through rehabilitation.**	Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond mining as the case may be.	(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Site Establishment	Dust and noise Vegetation disturbance	Dust suppression by means of water spraying. Rehabilitation, Ripping of compact ground. Seeding with indigenous plant. Speed limits of 30km per hour	1 month	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.

Temporal Roads construction	Dust and noise Vegetation disturbance	Dust suppression by means of water spraying. Roads will be ripped to a depth of 300mm in order to allow vegetation growth	1 month	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.
Temporal storage of hydrocarb.	Surface and ground water contamination	Demolishing of cement slabs and bund wall during decommissioning phase	During last Phase	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.

Mining	Dust and noise Vegetation disturbance Drainage	Dust suppression by means of water spraying. Dust fall-out buckets. Concurrent rehabilitation will be done by backfilling the trenches. Topsoil will be spread on top to allow plant succession. Site Access restriction Monitoring. Drip trays placed under each stationary equipment. Seeding with indigenous plant. Speed limit of 30km/h. Labelled Waste containers. Vegetation will be protected by avoiding unnecessary clearance and by using existing roads at all times. No poaching allowed. Comply with occupational noise regulations of the Occupational Health and	Month 2-22	Compliance with NEMA, NWA, MPRDA, NEM:WA , MPRDA and the NEMA principles will be done.

		Safety Act, Act 85 of 1993. Provide ear plugs for noise pollution.		
Decommissioning and final rehabilitation	Dust and noise Vegetation disturbance Drainage. Surface and ground water contamination	All infrastructure removed from site. Waste will be disposed ofat licenced facilities. Any contaminated soils will be cleaned and rehabilitated. All compacted surfaces will be ripped to a depthof 300mm. The successful establishment of vegetation is important toensure the return of animals in the area. If succession does not takeplace, a seeding programme in consultation with the ecologist should be implemented.	Last Phase	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.

i) Financial Provision

(1) Determination of the amount of Financial Provision.

(a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

Closure Objectives:

- The main objective would be to leave the environment in the same state as before.
- To prevent sterilization of ore reserves.
- To prevent the erection of permanent structures.
- Establish a self-sustainable vegetation growth.
- To limit and rehabilitate any erosion features and prevent any damage to the soil capacity.
- To limit and manage the visual impact.
- Ensure the health and safety of all humans and animals that maybe affected by the activities.
- The last closure objective is that the mine is closed efficiently, cost effectively and in accordance with government policy.

(b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.

Confirmed by Pieter Jacobus Smit

(c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.

Infrastructure Areas:
On completion of the mining operation, the various surfaces, including the access roads, the office area, storage areas, and the screening plant site, will be rehabilitated as follows:

All remaining material on the surface will be removed to the original topsoil level. This material will then be backfilled into the depressions. Any compacted area will then be ripped to a depth of 300mm, where possible the topsoil or growth medium returned and landscaped.

All infrastructure, equipment, screening plant, and other items used during the operational period will be removed from site.

On completion of operations, all buildings, structures, or objects on the office site will be dealt with in accordance with Regulation 44 of the Minerals and Petroleum Resources Development Act, 2002, which states:

1. When a mining right, mining right, retention permit or mining permit lapses, is cancelled or is abandoned or when any mining or mining operation comes to an end, the holder of such right or permit may not demolish or remove any building, structure or object —
(a) which may not be demolished or removed in terms of any other law;
(b) which has been identified in writing by the Minister for purposes of this section; or
(c) which is to be retained in terms of an agreement between the holder and the owner or occupier of the land, which agreement has been approved by the Minister in writing.
2. The provision of subsection (1) does not apply to bona fide mining equipment, which may be removed.
Topsoil and Stockpile Deposits: Disposal facilities
Waste material of all description inclusive of receptacles, scrap, rubble and tyres will be removed entirely from the mining area and disposed of at a approved landfill facility. It will not be
permitted to be buried or burned on the site.

On-going seepage, control of rainwater
No monitoring of ground or surface water will take place, except if requested by the DWS.

Long term stability and safety
It will be the objective of mine management to ensure the long- t e r m stability of all rehabilitated areas including the backfilled depressions. This will be done by the monitoring of all areas until a closure certificated has been issued.
Final rehabilitation in respect of erosion and dust control will be done. Self-sustaining vegetation will result in the control of erosion and
dust and no further rehabilitation is planned.

Final rehabilitation roads
After rehabilitation has been completed, all roads will be ripped or ploughed, fertilized, and seeded.

Submission of information
Reports on rehabilitation and monitoring will be submitted annually to the Department of Mineral Resources and Energy — Northern Cape.

Maintenance (Aftercare)
Maintenance after closure will mainly concern the regular inspection and monitoring and/or completion of the re-vegetation programme.

The aim of this Environmental Management Plan is for rehabilitation to be stable and self-sufficient, so that the least possible aftercare is required.

The aim with the closure of the mine will be to create an acceptable post-mine environment and land-use. Therefore, all agreed commitments will be implemented by Mine Management.

D. After-effects following closure:

Acid mine drainage
No potential for bad quality leach or acid mine drainage development exists after mine closure (in this case all Kimberlitic material will be removed).

Long term impact on ground water
No after effect on the groundwater yield or quality is expected.

Long-term stability of rehabilitated land
One of the main aims of any rehabilitated ground will be to be self-sustaining and stable end result.
Cleaning of all drill bits material concurrently and replacing of topsoil where available.

Submissions of Information
Reports on rehabilitation and monitoring will be submitted annually to the Department Mineral Resources and Energy -Northern Cape.

(d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The ultimate rehabilitation of the mining site involves the sloping, levelling, replacement of topsoil and the seeding of a grass seed mix in areas that does not recover acceptably as agreed to with the landowner. This will ensure that the site could be regarded as safe for humans and animals and will also ensure that the site is stable from an erosion point of view and available for future use.

(e) **Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline**.

No	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighing factor 1	E=A*B*C*D Amount Rands
1	Dismantling of processing plant and structures	m^3	0	17.69	1	1	
2(A)	Demolition of steel buildings and structures	m^2	0	246.34	1	1	
2(B)	Demolition of reinforced concrete buildings and structures	m^2	32	360.98	1	1	11551.36
3	Rehabilitation of access roads remain for future use	m^2	0	43.81	1	1	
4(A)	Demolition and rehabilitation of electrical railway lines	$2m^2$	0	425.44	1	1	
4(B)	Demolition and rehabilitation of non-electrical railway lines	m^2	0	232.05	1	1	0
5	Demolition of housing and/or administration facilities (mobile)	m^2	48	489.9	1	1	23515.2
6	Opencast rehabilitation including final voids and ramps	ha	0.009	249335,1	1	1	2244.01
7	Sealing of shafts and inclines	m^3	0	131,5	1	1	
8(A)	Rehabilitation of overburden and spoils	ha	0,009	171208,4	1	1	1540.87
8(B)	Rehabilitation of processing waste deposits and evaporation ponds(non-polluting potential)	ha	0	213184	1	1	0
8I	Rehabilitation of processing waste deposits and evaporation ponds(polluting potential)	ha	0.009	619241.3	1	1	5573.17
9	Rehabilitation of subsided areas	ha	0	143361.3	1	1	
10	General surface rehabilitation	ha	0,024	26500	1	1	183.11
11	River diversions	ha	0	135625.9	1	1	
12	Fencing	m	0	154.7	1	1	
13	Water management	ha	0	51568.8	1	1	
14	2 to 3 years of maintenance and after care	ha	1	18049.08	0	1	0
15(A)	Specialist study	sum				1	
15(B)	Specialist study	sum				1	
					Subtotal		39034.55
Preliminary & General				15% of subtotal if less than R100 M			5855.18
Contingency 10%							
				Grand Total			44889.73

(f) Confirmthat the financial provision will be provided as determined. Confirmed by Pieter Jacobus Smit

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including.

g) Monitoring of Impact Management Actions
h) Monitoring and reporting frequency
i) Responsible persons
j) Time period for implementing impact management actions
k) Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Topography	To minimize the reduce of land capability	To ensure that rehabilitation post-mining slopes are stable free draining and no slopes have an angle in excess of 20 degrees	Site Manager/ Environmentalist	Monitoring will be done ona annual basis to ensure that the levels and the slopes are in order
Soil	To prevent soil pollution; To limit soil compaction; To curb soil erosion; and To reinstate a growth medium able to sustain plant life.	Soil depth and chemical composition will be tested, and possible erosion damage will be assisted and rectified	Site Manager/ Environmentalist	Monitoring will be done ona annual basis or after a heavy rain event
Air quality	To control the incidence of	To ensure that the mine minimize dust omission, so	Site Manager/ Foreman appointed SHE Consultant	Visual inspection will be done and managed by

	unacceptable levels of dust pollution on site	that dust does not become a nuisance for affected parties and health hazard		dust suppression by a water tanker. Quarterly test will also be conducted by a Health and Environmental Consultant and submitted to Mine Health and Safety for monitoring purposes
Fauna	To minimize vegetation destruction in drill areas, and therefore a habitat for wildlife; and To eliminate poaching and the extermination of animal species within the boundaries of the study area as well as the surroundings area.	To ensure that the species diversity and abundance is not significantly reduced	Site Manager/ Environmentalist	Monitoring will be done at rehabilitated area on annual basis to investigate species diversity and abundance
Flora	To minimize the destruction of vegetation units; and To control invasionof exotic and invasive plant species.	To ensure that the rehabilitated areas become self-maintaining	Site Manager/ Environmentalist	Monitoring will be done at the rehabilitated areas ona twice a year basis (mid-summer and mid- winter). Where species diversity and vegetation cover will be investigated

Noise	To control the incidence of unacceptable noise levels on site	The management objective willbe to reduce any level of noise,shock and lightning that may have an effect on persons and animals, both inside the plant and that which may migrate outside the plant area.	Site Manager/ Foreman appointed SHE Consultant	Quarterly reports on fall- out noise monitoring will be conducted as required. If any complaints are received from the public or state departments regarding noise levels the levels will be monitored at prescribed monitoring points
Surface water	To conserve water; and To eliminate the contamination of run-off and source of the water surface	There are no sources in the vicinity of the mine.	Site Manager/ Water supply	No monitoring will be doneto monitor the quality of the surface water
Ground water	To minimize and prevent as far as practically possible the contamination of the ground water	No ground water is used	Site Manager/ Water supply	No monitoring will be doneto monitor the levels and quality

l) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

Annual Performance Assessment and Environmental Audit will also be conducted and submitted to the Department Mineral Resources and Energy-Kimberley, Northern cape Region.

m) Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

- An Environmental, Health and Safety induction programme will be provided to all employees prior to commencing work, and they will sign acknowledgement of the induction.

- A daily "toolbox talk" will be held prior to commencing work, which will include discussions on health, safety and environmental considerations. The toolbox talks should be led by the Site Manager.

ENVIROMENTAL AWARNESS TRAINING PROGRAMME PROCEDURES

Natural resources are limited and not always renewable and it is the responsibility of management to ensure that all employees are trained to understand that impact of their tasks on the environment and to reduce them wherever possible. Environmental awareness training must be given to new employees on the site and any contractors who may come onto the site for a short period of time. Refresher training must be givento permanent employees on an annual basis. The objective of this procedure is to ensure that all employees on the, including contractors, are competent to perform their duties, thereby eliminating negative impacts on their safety, health and the environment

The Environmental topics to be covered in awareness training should include the following:

- **RESOURCE MANAGEMENT**

(i) The importance of saving water.
(ii) South Africa is a water scares country and rivers are polluted.
(iii) Do not throw litter into rivers or water drains.
(iv) Do not dispose of oils in sewers.

(b) Air pollution- Climate changes

(i) The use of fossil fuels is increasing the amount of greenhouse gases that are discharged to the atmosphere. Share transport or use public transport.
(ii) Don't burn any rubbish, the smoke pollutes the air.

(iii) Plant trees, they clean the air, provide us with oxygen and removed the greenhouse gas carbon dioxide from the air.

(c) Soil conservation

(i) Prevent over grazing of farmlands, keep vegetation on surface on theland to prevent soil erosion.

(ii) Plant trees.

- **HAZARDOUS SUBTANCE USE AND STORAGE**

a. Solvents, petrol, diesel, insecticides, chlorine, detergents, chemical fertilisers and harmful to the environment and to your health. Use them sparingly and do not let them get into the water system. Containers must be disposed of to a licensed hazardous waste disposal facility.
b. Hazardous substances must be stored and used correctly.
c. Ensure that 16 points Material Substances Safety Data Sheets (MSDS) are available at the point of store.
d. Compressed gas storage requirement.
e. Flammable substances store requirement.

- **INCIDENT AND EMERGENCY REPORTING**

a. The company must have an emergency/ incident reporting system whereby environmental incidents can be reported and actioned to mitigate and follow up on.

- **OIL/DIESEL/PETROL SPILL CLEAN UP**

3. All employees who work with machines and vehicles must be instructed how to prevent and clean up an oil or diesel spill appropriately. Spill kits must be available on-site drip trays must be used when servicing vehicles.

- **CONSERVATION OF WATER**

a. Campaign to save water on site.
b. Clean water is expensive and potable water must be used carefully.
c. Prevent pollution of water by preventing spills and dispose of wastes properly.

- **CONSERVATION OF VEGETATION**

Plants, grasses and trees are very important to our existence on the earth, they provide food, fuel, shelter, raw materials and they clean the air. Indigenous plants are especially important for muti and the whole ecology of life. Human activities are destroying the natural forests of the earth. The natural forests are the “lungs” of the planet and unfortunately, they are being cleared faster than they can be regenerated.

a. EIA’s are to be done before virgin bush can be cleared.
b. Vegetation cover reduces water and topsoil loss from the ground, do not clear vegetation unnecessarily.
c. Indigenous trees provide shade that attract wild birds.

d. Do not chop down indigenous trees without good reason.

e. Implement a tree planting programme.
f. Remove alien invasion trees in your area such as Prosopis, Syringa and Pepper trees, Cactus plants.

WASTE MANAGEMENT

a. Employees must be instructed on how to tell the difference between hazardous waste and general waste.
b. Employees should be trained on how to separate hazardous waste and general waste and where to dispose of these wastes.

(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

Air Quality:
Control the incidence of unacceptable dust pollution on site.

Surface water:
Conserve water and eliminate the contamination of run-off and sources of surface water.

Ground water:
Minimise and prevent as far as practically possible the contamination of ground water.

Flora:
Minimise the destruction of vegetation.
Control invasion by exotic and invasive plant species.
Fauna:
Minimise the destruction of vegetation and therefore habitat for wildlife; and
Eliminate poaching and the extermination of animal species.

Noise:
Control the incidence of unacceptable noise levels on site.

Aesthetics:
Minimise aesthetics disturbance; and
Reduce the visual impact of the mining operation through continuous rehabilitation.

Soils:
Prevent soil pollution.
Limit soil compaction.
Curb soil erosion.
Reinstate a growth medium able to sustain plant life.

Land capability:
Minimise the reduction of land capability.

Sensitive landscapes:
Protect sensitive landscapes from potential negative impacts.

Waste Management:
Demarcated sites for waste.

n) Specific information required by the Competent Authority
(Among others, confirm that the financial provision will be reviewed annually).

Quarterly reports on fall-out and nuisance dust and noise monitoring will be conducted and incorporated into the annual reports forwarded to the Principal Inspector of Mines, Health and Safety Inspectorate, Northern Cape.
Fauna and Flora will be monitored annually for the Performance Assessment Report. Annual performance Assessment and financial quantum reports will be conducted.

2) UNDERTAKING

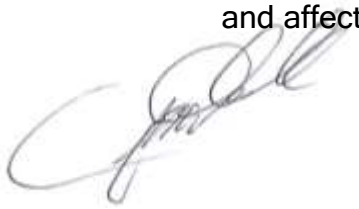
The EAP herewith confirms.

a) the correctness of the information provided in the reports

b) the inclusion of comments and inputs from stakeholders and I&Aps ;

c) the inclusion of inputs and recommendations from the specialist reports where relevant; and

d) that the information provided by the EAP to interested and affected parties andany responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.



Signature of the environmental assessment practitioner:

GOLCOR (PTY) LTD

Name of company:

26 June 2023

Date:

-END-

REFERENCES AND ACKNOWLEDEGEMENTS

1.Grassland Biome 8

Scott-Shaw, George J. Bredenkamp, Leslie W. Powrie, Louis Scott, Kelson G.T. Camp, Sarel S. Cilliers, Hugo Bezuidenhout, Theo H. Mostert, Stefan J. Siebert, Pieter J.D. Winter, John E. Burrows, Linda Dobson, Robert A. Ward, Marc Stalmans, Edward G.H. (Ted) Oliver, Frances Siebert, Ernst Schmidt, Khotso Kobisi and Lerato Kose G

4. CFM Agriculture GIS

5. National Landcover 2014 DEA

6. National Environmental Management Act, 1998(Act 107 of1998) (as Amended) NEMA

7. Meteoblue

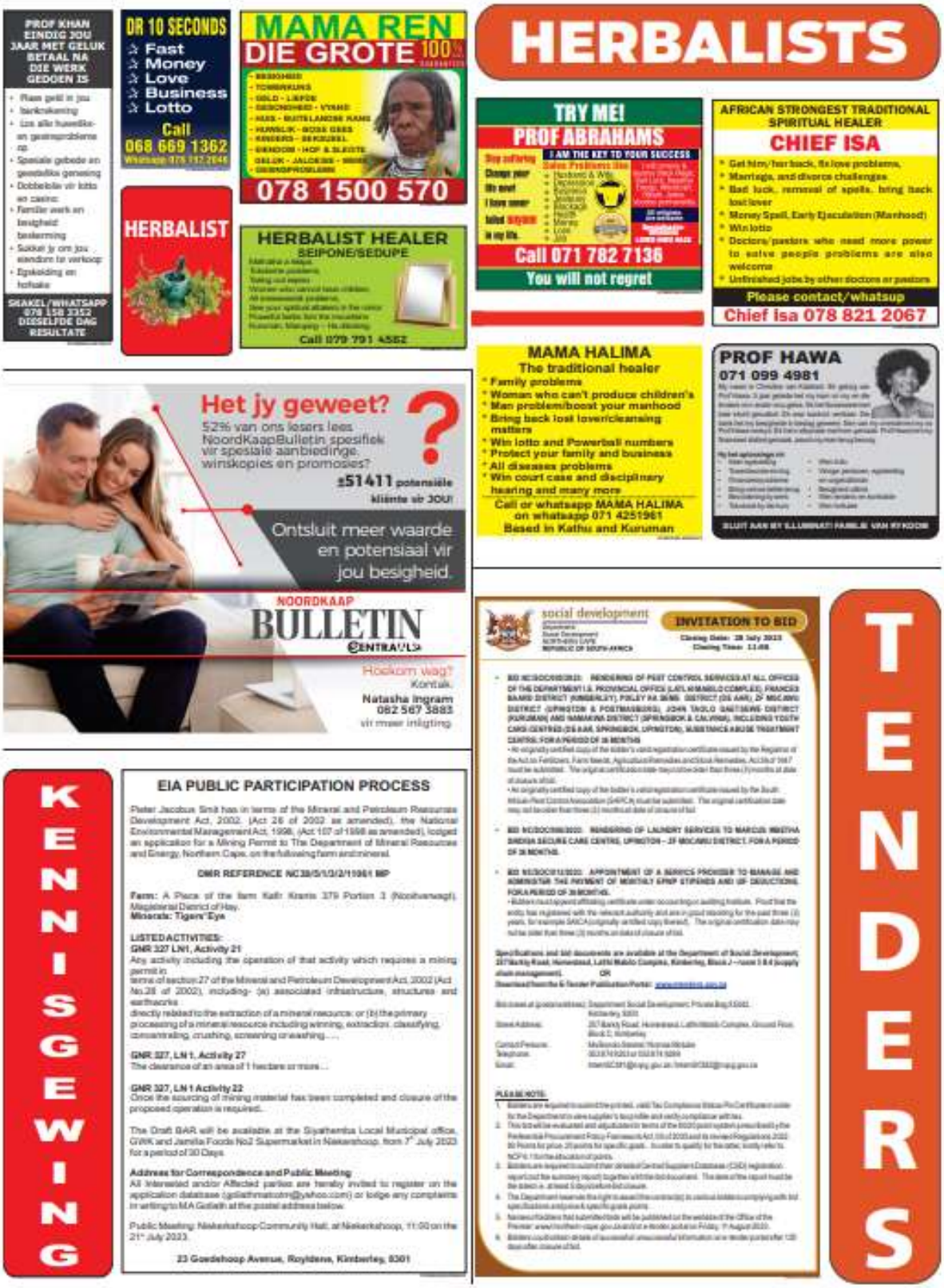
8. IDP Mantsopa Local Municipality 2019 to 2020

9. SANBI GIS

APPENDICES
POPI ACT APPLIED FOR PERSONAL DETAILS

ADVERTISEMENT

APPENDIX A



KENNISGEWING

EIA PUBLIC PARTICIPATION PROCESS

Pieter Jacobus Smit has in terms of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002 as amended), the National Environmental Management Act, 1998, (Act 107 of 1998 as amended), lodged an application for a Mining Permit to The Department of Mineral Resources and Energy, Northern Cape, on the following farm and mineral.

DMR REFERENCE NC30/5/1/3/2/11061 MP

Farm: A Piece of the farm Kafir Krants 379 Portion 3 (Nooitverwagt), Magisterial District of Hay.
Minerals: Tigers' Eye

LISTED ACTIVITIES:
GNR 327 LN1, Activity 21
Any activity including the operation of that activity which requires a mining permit in
terms of section 27 of the Mineral and Petroleum Development Act, 2002 (Act No.28 of 2002), including- (a) associated infrastructure, structures and earthworks
directly related to the extraction of a mineral resource: or (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing.....

GNR 327, LN 1, Activity 27
The clearance of an area of 1 hectare or more...

GNR 327, LN 1 Activity 22
Once the sourcing of mining material has been completed and closure of the proposed operation is required..

The Draft BAR will be available at the Siyathemba Local Municipal office, GWK and Jamilla Foods No2 Supermarket in Niekershoop, from 7th July 2023 for a period of 30 Days.

Address for Correspondence and Public Meeting
All Interested and/or Affected parties are hereby invited to register on the application database (goliathmalcolm@yahoo.com) or lodge any complaints in writing to M A Goliath at the postal address below.

Public Meeting: Niekerkshoop Community Hall, at Niekerkshoop, 11:00 on the 21st July 2023.

23 Goedehoop Avenue, Royldene, Kimberley, 8301

Department:
Social Development
NORTHERN CAPE
REPUBLIC OF SOUTH AFRICA

INVITATION TO BID

Closing Date: 28 July 2023
Closing Time: 11:00

- **BID NC/SOC/005/2023: RENDERING OF PEST CONTROL SERVICES AT ALL OFFICES OF THE DEPARTMENT I.E. PROVINCIAL OFFICE (LATLHI MABILO COMPLEX), FRANCES BAARD DISTRICT (KIMBERLEY), PIXLEY KA SEME DISTRICT (DE AAR), ZF MGCAWU DISTRICT (UPINGTON & POSTMASBURG), JOHN TAOLO GAETSEWE DISTRICT (KURUMAN) AND NAMAKWA DISTRICT (SPRINGBOK & CALVINIA), INCLUDING YOUTH CARE CENTRES (DE AAR, SPRINGBOK, UPINGTON), SUBSTANCE ABUSE TREATMENT CENTRE; FOR A PERIOD OF 36 MONTHS**
  - An originally certified copy of the bidder's valid registration certificate issued by the Registrar of the Act on Fertilizers, Farm Needs, Agricultural Remedies and Stock Remedies, Act 36 of 1947 must be submitted. The original certification date may not be older than three (3) months at date of closure of bid.
  - An originally certified copy of the bidder's valid registration certificate issued by the South African Pest Control Association (SAPCA) must be submitted. The original certification date may not be older than three (3) months at date of closure of bid
- **BID NC/SOC/006/2023: RENDERING OF LAUNDRY SERVICES TO MARCUS MBETHA SINDISA SECURE CARE CENTRE, UPINGTON – ZF MGCAWU DISTRICT, FOR A PERIOD OF 36 MONTHS.**
- **BID NC/SOC/013/2023: APPOINTMENT OF A SERVICE PROVIDER TO MANAGE AND ADMINISTER THE PAYMENT OF MONTHLY EPWP STIPENDS AND UIF DEDUCTIONS, FOR A PERIOD OF 36 MONTHS.**
  - Bidders must append affiliating certificate under accounting or auditing Institute. Proof that the entity has registered with the relevant authority and are in good standing for the past three (3) years, for example SAICA (originally certified copy thereof). The original certification date may not be older than three (3) months on date of closure of bid.

Specifications and bid documents are available at the Department of Social Development, 257 Barkly Road, Homestead, Latlhi Mabilo Complex, Kimberley, Block J – room 3 & 4 (supply chain management). OR
Download from the E-Tender Publication Portal: www.etenders.gov.za

Bid closes at (postal address):	Department Social Development, Private Bag X5042, Kimberley, 8300
Street Address:	257 Barkly Road, Homestead, Latlhi Mabilo Complex, Ground Floor, Block C, Kimberley
Contact Persons:	Ms Bonolo Serretsi / Nomsa Molube
Telephone:	053 874 9203 or 053 874 9299
Email:	InternSCM1@ncpg.gov.za / InternSCM2@ncpg.gov.za

PLEASE NOTE:
1. Bidders are required to submit the printed, valid Tax Compliance Status Pin Certificate in order for the Department to view supplier's tax profile and verify compliance with tax.
2. This bid will be evaluated and adjudicated in terms of the 80/20 point system prescribed by the Preferential Procurement Policy Framework Act, 05 of 2000 and its revised Regulations 2022. 80 Points for price, 20 points for specific goals. In order to qualify for the latter, kindly refer to NCP 6.1 for the allocation of points.
3. Bidders are required to submit their detailed Central Suppliers Database (CSD) registration report (not the summary report) together with the bid document. The date of the report must be the latest i.e. at least 5 days before bid closure.
4. The Department reserves the right to award the contract(s) to various bidders complying with bid specifications and price & specific goals points.
5. Names of bidders that submitted bids will be published on the website of the Office of the Premier: www//northern-cape.gov.za and/or e-tender portal on Friday, 11 August 2023.
6. Bidders could obtain details of successful/ unsuccessful information on e-tender portal after 120 days after closure of bid.

APPENDIX B

PUBLIC NOTICE BOARD AND PLACEMENT OF BASIC ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

Notice Boards

APPENDIX C
BAR Placement

TELEPHONIC CONVERSATIONS
Telephonic conversations were held as communication medium.
To the farm owner representative P J Smit.
Farm Owner Representative P J Smit and neighbouring farm owner

NEIGHBOURING FARM OWNERS

NERANA TRADE INVESTMENTS (RIGHT HOLDER)

DATABASE OF INTERESTED AND AFFECTED PARTIES
A database of Interested and Affected parties are attached as **APPENDIX D.**

Email CORRESPONDENCE APPENDIX E
Emails as a consultation medium have been used where such details are known and preferred to by the participant in the process. **APPENDIX E**

GOVERNMENT DEPARTMENTS AND ORGANS OF STATE. APPENDIX F

All stakeholders and I&AP's have been notified of the report's availability and to make presentations within 30 days of receipt. Hardcopies of the report have either been submitted by hand or by registered mail to affected organs of state and relevant authorities.

DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

DEPARTMENT OF ENVIRONMENT AND NATURE CONSERVATION

DEPARTMENT OF WATER AND SANITATION

MUNICIPAL MANAGER SIYATHEMBA LOCAL MUNICIPALITY

LAND CLAIMS COMMISSIONER: NORTHERN CAPE

COMMISSION ON RESTITUTION OF LAND RIGHTS

OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: NORTHERN CAPE
Hyesco Arcade, 4-8 Old Main Road, Kimberley, 8300 | PO Box 2458, Kimberley, 8300
Tel: (053) 807 5700 | Fax: (053) 831 6501

Enquiries: **Pabalelo Mokale**

Malcolm Goliath
0824523693

Dear Mr / Ms M Goliath

EAP for Prospecting Rights Application.

LAND CLAIMS ENQUIRY

- **Farm Kafir Krants 379 Portion 3 (Nooitverwagt), situated in the Magisterial District of Hay in the Northern Cape Province.**

We refer to your letter received: **25 May 2023**

We confirm that as at the date of this letter that no land claim appears on our database in respect of the Property this includes the database for claims lodged by 31 December 1998; and those lodged between 1 July 2014 and 27 July 2016 in terms of the Restitution of Land Rights Amendment Act, 2014.

Whilst the Commission takes reasonable care to ensure the accuracy of the information it provides, there are various factors that are beyond the Commission's control, particularly relating to claims that have lodged but not yet been gazetted such as:

- Some Claimants referred to properties they claim dispossession of rights in land against using historical property descriptions which may not match the current property description; and

- Some Claimants provided the geographic descriptions of the land they claim without mentioning the particular actual property description they claim dispossession of rights in land against.

The Commission therefore does not accept any liability whatsoever if through the process of further investigation of claims it is found that there is in fact a land claim in respect of the above property.

If you are aware of any change in the description of the above property after 19 June 1913 kindly supply us with such description so as to enable us to do a further search.

Yours faithfully

Dr. M. Du Toit
Chief Director: Land Restitution Support-Northern Cape
Date: 30/05/2023

PUBLIC AND OTHER INTERESTED AND AFFECTED PARTIES

A Public meeting will be held, the minutes and attendance register kept as part of **APPENDIX G**.

SCREENING REPORT APPENDIX H
Source: Environment Screening Tool

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION ASREQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE

ENVIRONMENTAL SENSITIVITY

EIA Reference number: Mining Permit

Project name: PJS Mining

Project title: Tigers Eye Project

Date screening report generated: 26/06/2023 04:30:30

Applicant: Pieter Jacobus Smit

Compiler: M A Goliath

Compiler signature: .....

Application Category: Mining|Mining Permit

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Cadastral details of the proposed site 4
Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area 4
Environmental Management Frameworks relevant to the application 4
Environmental screening results and assessment outcomes **5**
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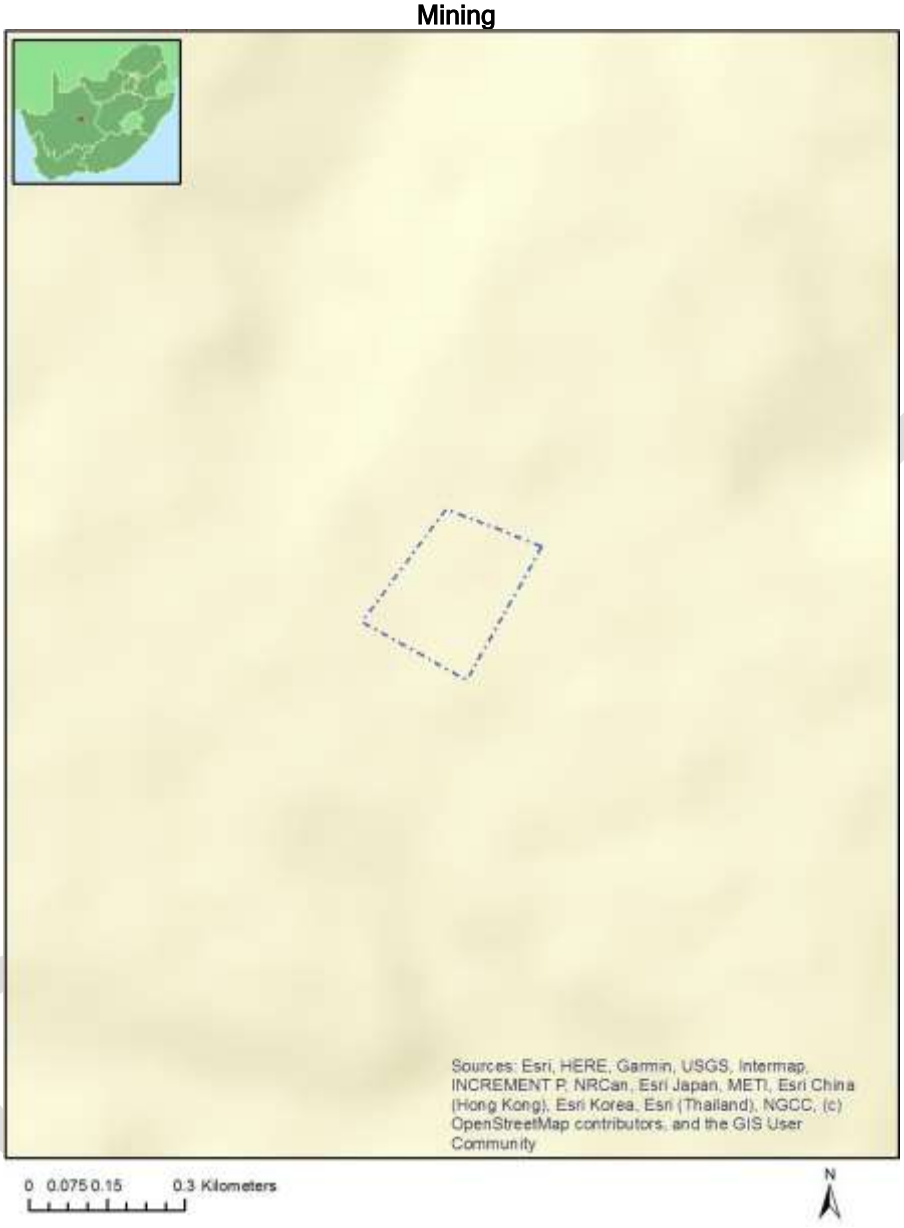
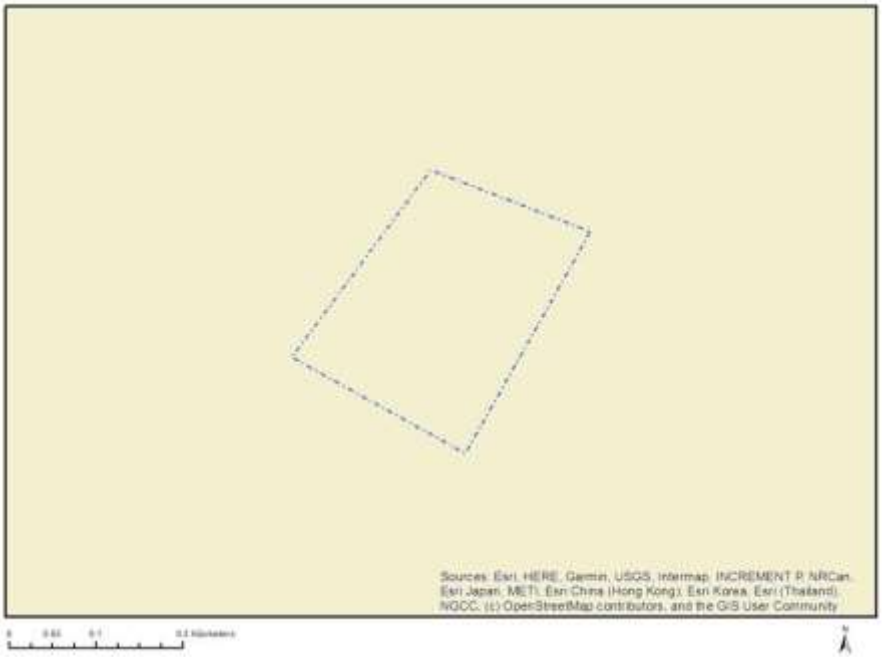
Proposed Project Location

Orientation map 1: General location

General Orientation: PJS Mining



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1		379	0	29°17'13.75S	22°57'43.54E	Farm
2		379	3	29°17'36.16S	22°57'33.43E	Farm Portion

Development footprint[1] vertices:
No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisationor applications under consideration within 30 km of the proposed area

No nearby wind or solar developments found.

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

[1] "development footprint", means the area within the site on which the development will take place and incudes all ancillary developments for example roads, power lines, boundary walls, paving etc. which requirevegetation clearance or which will be disturbed and for which the application has been submitted.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusionsor prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: **Mining|Mining Permit**.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

No intersection with any development zones found.

Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by asuitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme				X
Animal Species Theme			X	
Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme				X
Defence Theme				X
Paleontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the known impacts associated with the proposed development, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including theprovision of photographic evidence of the site situation.

No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_AssessmentProtocols.pdf

2	Archaeological and Cultural Heritage ImpactAssessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_General_Requirement_Assessment_P rotocols.pdf
3	Palaeontology ImpactAssessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_General_Requirement_Assessment_P rotocols.pdf
4	Terrestrial BiodiversityImpact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_ Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Pr otocols.pdf
6	Hydrology Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_General_Requirement_Assessment_P rotocols.pdf
7	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol. pdf
8	Radioactivity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_General_Requirement_Assessment_P rotocols.pdf
9	Traffic Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_General_Requirement_Assessment_P rotocols.pdf
10	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_General_Requirement_Assessment_P rotocols.pdf
11	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_General_Requirement_Assessment_P rotocols.pdf
12	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/Asse ssmentProtocols/Gazetted_Plant_Species_Assessment_Protocols. pdf

13	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY

Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive specieswith their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Aves-Neotis ludwigii

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEMESENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

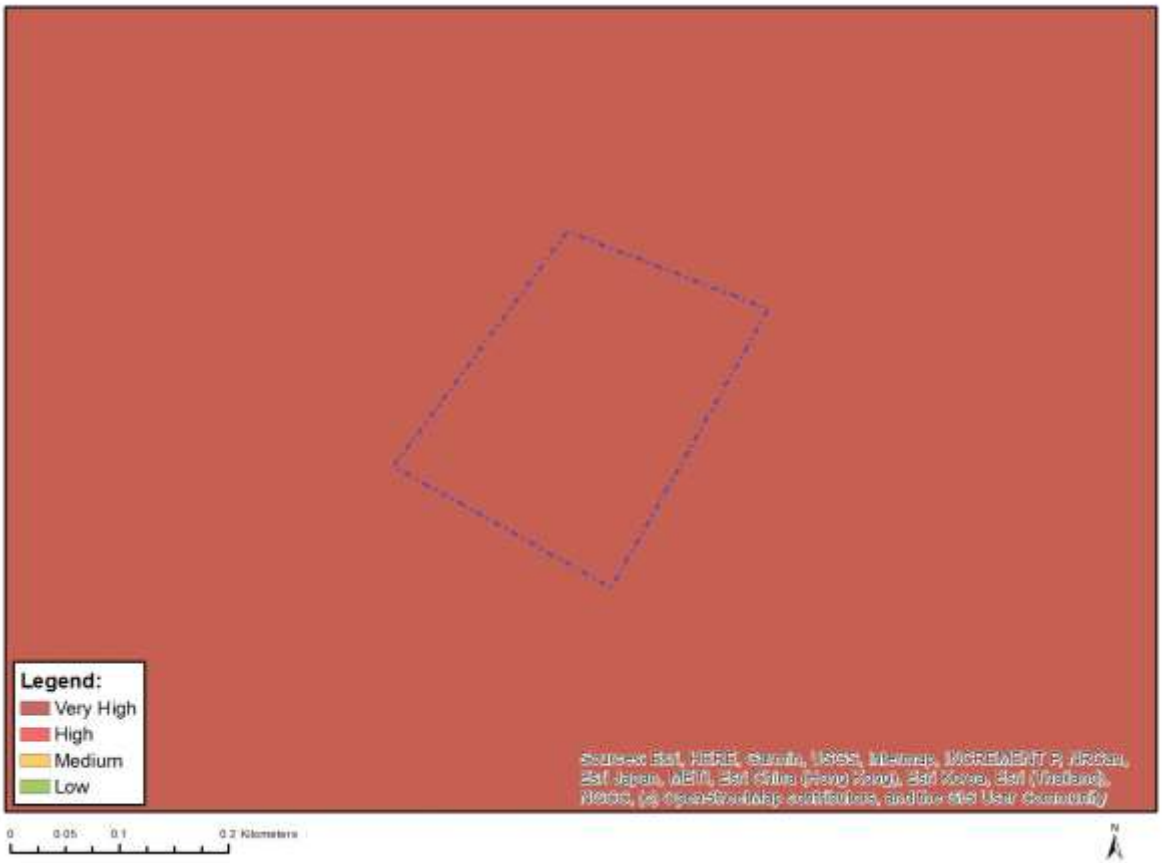
MAP OF RELATIVE DEFENCE THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

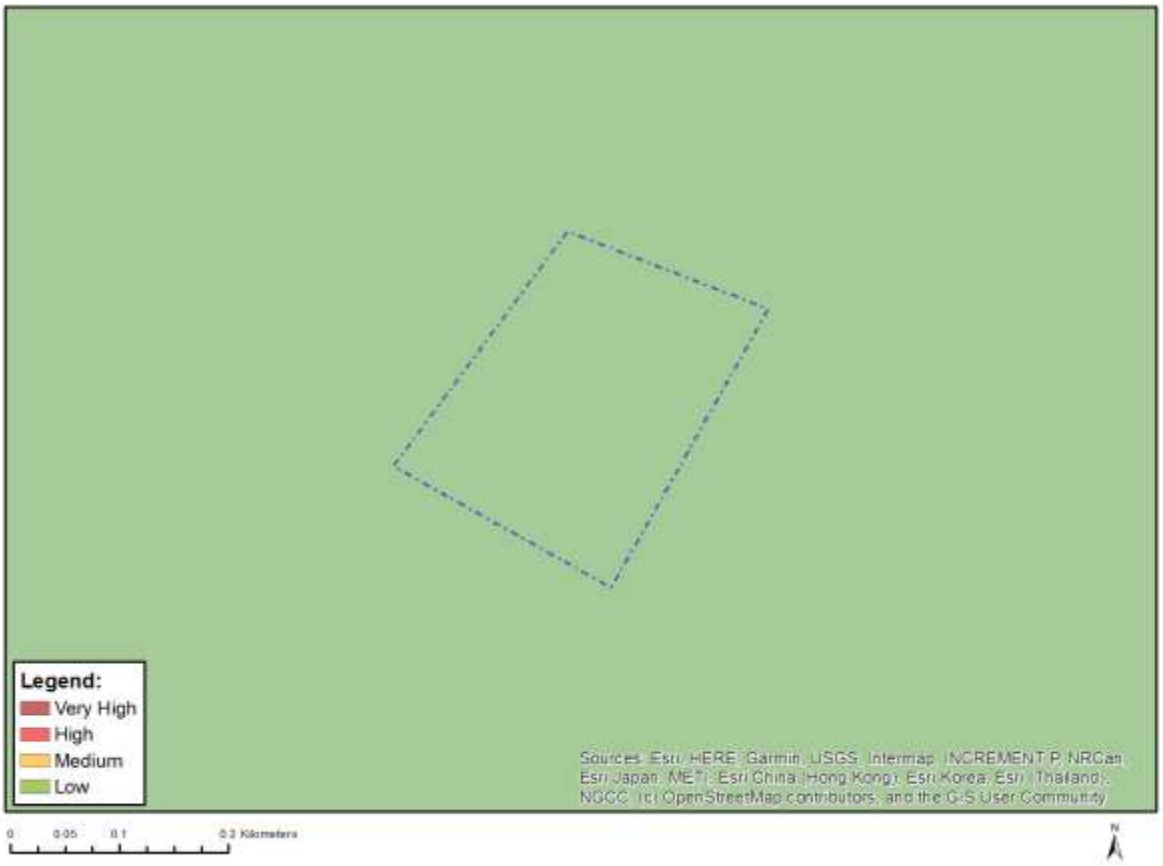


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	Features with a Very High paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive specieswith their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	ESA

APPENDIX I

Phase 1 Archaeological Impact Assessment, (Nooitverwagt Portion of Kafir Krants 379, Hay District, Northern Cape, South Africa, Document reference 2922BD 2006.0004 Prepared by Karen van Ryneveld-National Museum Bloemfontein commissioned by P.J Smit (snr and jnr).

NATIONAL · NASIONALE
MUSEUM
MUSIAMO WA SETJHABA
BLOEMFONTEIN

Phase 1 Archaeological Impact Assessment -

(NOOITVERWAGT PORTION OF) KAFIR KRANTS 379, HAY DISTRICT, NORTHERN CAPE, SOUTH AFRICA

DATE: 2006-08-14

Our Ref	: 2922BD 2006.004	SAHRA Ref DME Ref	: :

Phase 1 Archaeological Impact Assessment -

(NOOITVERWAGT PORTION OF) KAFIR KRANTS 379, HAY DISTRICT, NORTHERN CAPE, SOUTH AFRICA



REPORT TO -

P.J. SMIT, Jr (& P. J. SMIT)

PRIVATE

Tel: (053) 354 0821; Fax: (053) 354 0696; P.O. Box 39, Niekerkshoop, 8930;

E-mail: tigereye@telkomsa.net

ATTENTION -

MARY LESLIE

SOUTH AFRICAN HERITAGE RESOURCES AGENCY

Tel: (021) 462 4502; Fax: (021) 462 4509; P.O. Box 4637, Cape Town, 8000;

E-mail: mleslie@sahra.org.za

ANDREW TIMOTHY

SOUTH AFRICAN HERITAGE RESOURCES AGENCY (NORTHERN CAPE)

Tel: (053) 831 2537; Fax: (053) 833 1435; P.O. Box 1930, Kimberley, 8300;

E-mail: sahranc2@iafrica.com

PREPARED BY -

KAREN VAN RYNEVELD

NATIONAL MUSEUM BLOEMFONTEIN, ARCHAEOLOGY CONTRACTS OFFICE

Tel: (051) 447 9609 / 084 871 1064; Fax (051) 447 6273; P.O. Box 266, Bloemfontein, 9300;

E-mail: karen@nasmus.co.za

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1) PROJECT BRIEF

2) THE ARCHAEOLOGICAL IMPACT ASSESSMENT

3) IMAGE GALLERY

4) CONCLUSION

5) RECOMMENDATIONS

6) ACKNOWLEDGEMENTS

7) APPENDIX 1:
SCHEMATIC OUTLINE of the PRE-HISTORIC and HISTORIC PERIODS

8) APPENDIX 2:
EXTRACTS from the NATIONAL HERITAGE RESOURCES ACT (No 25 of 1999)

1) PROJECT BRIEF

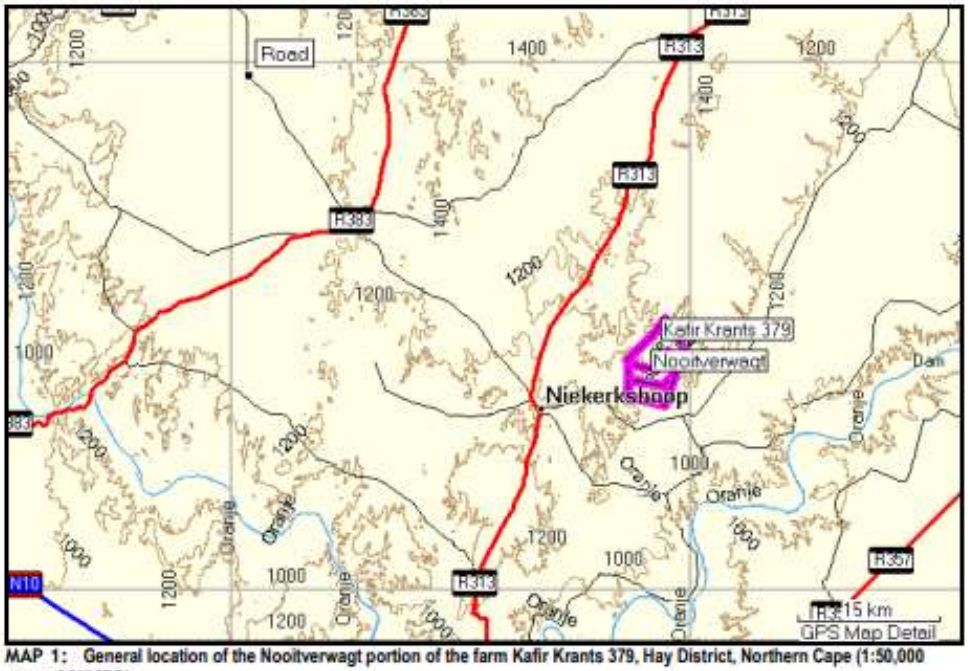
The National Museum Bloemfontein, Archaeology Contracts Office, was contracted by the developer, P.J. Smit, Jr, to conduct a Phase 1 Archaeological Impact Assessment. The assessment was requested in compliance with prospecting and mining right environmental requirements as set out in the Mineral and Petroleum Resources Development Act, No 28 of 2002, represented by the Department of Minerals and Energy (DME), the particulars of which are described in the National Environmental Management Act, No 107 of 1998, represented by the Department of Economic and Environmental Affairs and Tourism (DEEAT) and the National Heritage Resources Act, No 25 of 1999, represented by the South African Heritage Resources Agency (SAHRA).

The assessment was requested prior to the developers' application to DME; no DME or SAHRA Ref. no's thus exist.

This document reports on the findings of the Archaeological Impact Assessment.

PROPERTY DESCRIPTION:

The proposed development is situated on the Nooitverwagt portion of the farm Kafir Krants 379, Hay District, Northern Cape (1:50,000 map reference: 2922BD).



MAP 1: General location of the Nooitverwagt portion of the farm Kafir Krants 379, Hay District, Northern Cape (1:50,000 map ref 2922BD)

DEVELOPMENT IMPACT:

The developer intends to apply for two 1.5ha tigers' eye mining permits on the approximate 880ha property known as Nooitverwagt, a portion of the 3,496ha farm Kafir Krants 379.

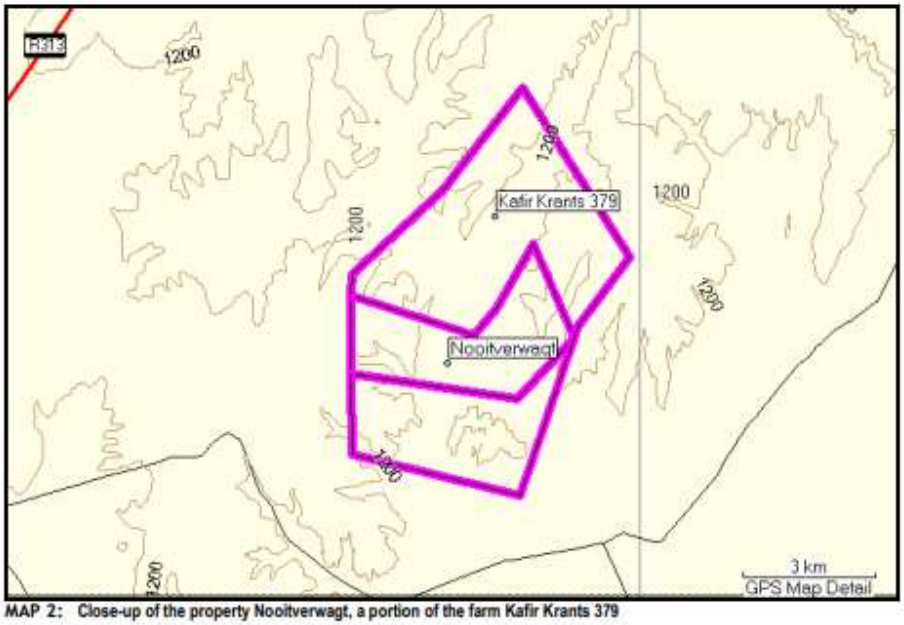
Mining will be done manually (pick and shovel), by small mining crews consisting of 3-50 crewmembers. Rehabilitation will form an integrated part of the mining method; where possible sides will be rehabilitated immediately as mining progress. Existing farm roads will be utilised during mining operations.

2) THE ARCHAEOLOGICAL IMPACT ASSESSMENT

I visited the site on 2006-08-02. The assessment was limited to a Phase 1 surface survey done by foot. No excavation or sub-surface testing was done since a permit from SAHRA is required to do so. Sub-surface interpretations are based on inspected existing open mining sections. GPS co-ordinates were taken with a Garmin e-trex vista GPS (3-8 m error margin). Photographic documentation was done with a Casio exilim EX-S2 camera.

The assessment covered:

i. Existing farm roads; and
ii. The hill, incorporating both proposed mining sites (indicated on the map as A and B respectively).



MAP 2: Close-up of the property Nooitverwagt, a portion of the farm Kafir Krants 379

MAP 3: Close-up of the 880ha property Nooitverwagt, a portion of the farm Kafir Krants 379, indicating the location of the two proposed 1.5ha mining permit applications A and B

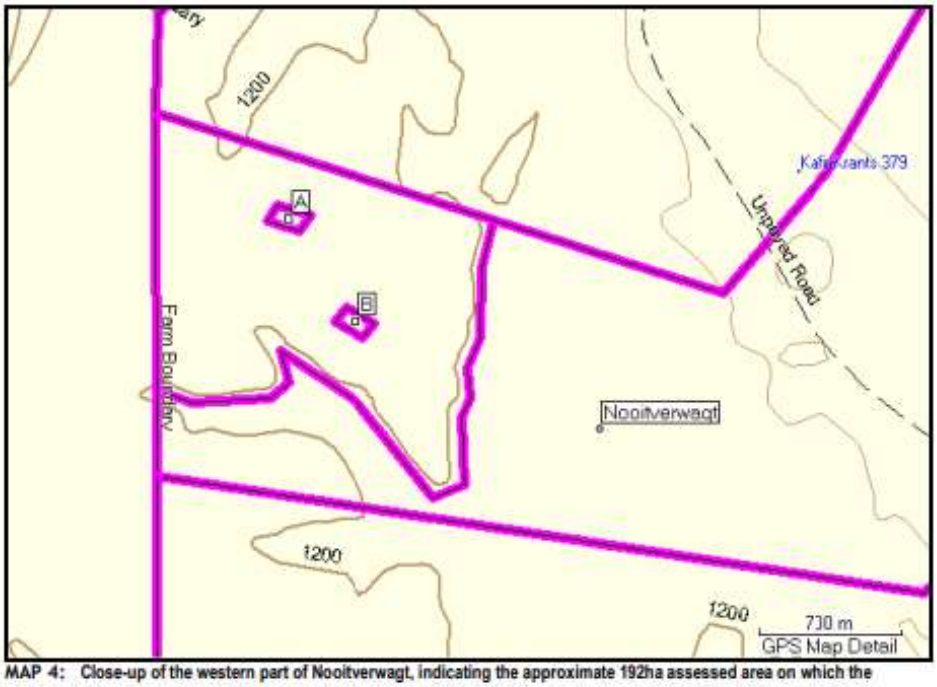
THE ACCESS ROADS

The two proposed 1.5ha tiger's eye developments will make use of existing farm roads, in totality exceeding 300m in length, and thus subject to assessment requirements of the NEMA (1998) and the NHRA (1999).

- No cultural heritage resources as defined and protected by the NHRA (1999) were identified during assessment of the access roads.

THE ASSESSED AREA INCORPORATING PROPOSED MINING AREAS A AND B

Both proposed 1.5ha tigers' eye mining developments would exceed ½ ha. The developments are thus subject to assessment requirements of the NHRA (1999).



MAP 4: Close-up of the western part of Nooitverwagt, indicating the approximate 192ha assessed area on which the proposed two 1.5 ha mining areas A and B will be situated

An approximate 192 ha area incorporating proposed mining area A (1.5ha) and mining area B (1.5ha) was assessed. The assessment focussed on, and covered the hill on which the developments will be situated. Banded ironstone, the geological basal and primary surface material is at intervals intersected by shallow layers or pockets of Hutton sand.

The hill is characterised by a number of digger's pits and dumps, the result of former un-rehabilitated manual mining.

A low density of Stone Age artefacts was identified within the assessed area. Observed artefact ratios (artefacts: m²) approximate 1: 64. Artefacts were restricted to the large flat hilltop with little to no artefact occurrences observed on the slopes of the hill.

Typologically and technologically artefacts can be ascribed to the Middle Stone Age (MSA) Industrial Complex. Stone tools were produced from yellow jasperlite; an indigenous, but not primary raw material to the area. No artefacts were produced from banded ironstone, probably due to the flake-like quality of the local banded ironstone. Observed MSA *fossils directeurs* included a number of bladelets and blades as well as a *Levallois* core. Typologically the majority of artefacts would be classed as irregular scrapers. Limited numbers of cores are ascribed to raw material size.

Artefacts were observed on the exposed basal banded ironstone surface or within shallow Hutton sand pockets.

No faunal or organic material can be associated with the low density surface lithic collection.

- The low quantity of artefacts and their surface / secondary context would prompt me to describe the low density lithic scatter as of *Low Significance* with a *Gereral Protected C* field rating (the site does not require further recording before destruction).

DEVELOPMENT AREA	RECORDED SITES, FIND PLACES AND FEATURES	IMAGE NR	CO-ORDINATES	
			SOUTH	EAST
ASSESSED AREA				
Mining Area A	A1	Image 3	S29° 17.293'	E22° 56.304'
	A2	Image 3	S29° 17.320'	E22° 56.403'
	A3	Image 3	S29° 17.363'	E22° 56.372'
	A4	Image 3	S29° 17.334'	E22° 56.274'
Mining Area B	B1	Image 1& 2	S29° 17.560'	E22° 56.511'
	B2	Image 1& 2	S29° 17.603'	E22° 56.598'
	B3	Image 1& 2	S29° 17.641'	E22° 56.567'
	B4	Image 1& 2	S29° 17.601'	E22° 56.478'

TABLE 1: GPS co-ordinates of the proposed development area, identified and associated sites and features

3) IMAGE GALLERY

IMAGE 1& 2: General view of the assessed area, characterised by past un-rehabilitated miner's pits and dumps

IMAGE 3: Mine dumps in the assessed area

IMAGE 4: Characteristic banded ironstone mining debris

IMAGE 5: Exposed mining sections, note the geological banded ironstone also serving as surface material with little to no topsoil

IMAGE 6: MSA artefacts: An irregular scraper and bladelet from the vicinity of proposed mining area A

IMAGE 7: An MSA blade / bladelet, a flake and piece of banded ironstone (bottom right) from the assessed area

IMAGE 8: A *Levallois* core from the assessed area

4) CONCLUSION

Assessment of the approximate 192ha area, incorporating the two 1.5ha proposed mining areas, Area A and Area B, indicated a low presence of MSA lithic artefacts restricted to the plateau. Typologically and technologically artefacts can be classified as MSA, with a number of MSA *fossils directeurs* present including a *Llevallois* core and a number of artefacts produced from prepared flake and blade technology. The majority of artefacts would however be classed as irregular scrapers and flakes. No associated faunal or organic material was observed.

Stone tools were exposed on the geological basal banded ironstone surface or within shallow pockets of Hutton sand.

The low quantity of artefacts in association with their secondary / surface context would render the occurrence as of *Low Significance* with a *General Protected C* field rating (the site does not require further recording before destruction).

Apart from the above-mentioned low density MSA lithic artefact scatter no built structures older than 60 years, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, cultural landscapes or viewscapes or palaeontological deposits that require protection under the NHRA (1999) have been identified.

5) RECOMMENDATIONS

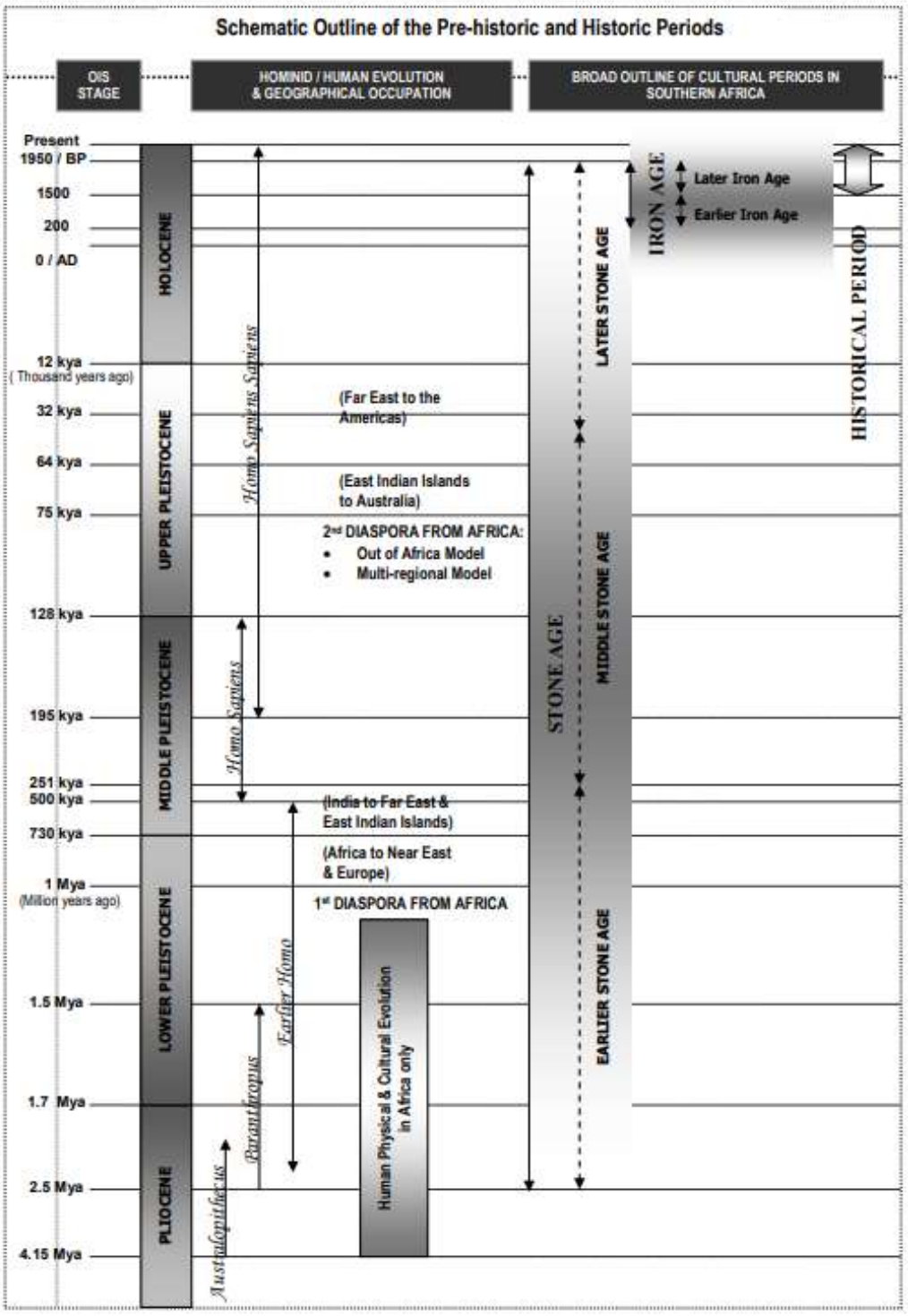
The location of the two proposed 1.5ha mining areas A and B is situated within the assessed 192ha area.

I would recommend that development in the assessed area proceed without the developer having to apply for a destruction permit.

6) ACKNOWLEDGEMENTS

I would like to thank Lukie Fourie for accompanying me to the site and for supplying development and on site information.

NOTE: Should the developer encounter any heritage resources, not reported on in this report, and as defined and protected by the NHRA (1999) during the course of development, the developer should immediately seize operation in the immediate vicinity and report the site to SAHRA or an ASAPA accredited CRM archaeologist.


Schematic Outline of the Pre-historic and Historic Periods
OIS STAGE
HOMINID / HUMAN EVOLUTION & GEOGRAPHICAL OCCUPATION
BROAD OUTLINE OF CULTURAL PERIODS IN SOUTHERN AFRICA
Present
1950 / BP
1500
200
0 / AD
12 kya
(Thousand years ago)
32 kya
64 kya
75 kya
128 kya
195 kya
251 kya
500 kya
730 kya
1 Mya
(Million years ago)
1.5 Mya
1.7 Mya
2.5 Mya
4.15 Mya
HOLOCENE
UPPER PLEISTOCENE
MIDDLE PLEISTOCENE
LOWER PLEISTOCENE
PLIOCENE
Homo Sapiens Sapiens
Homo Sapiens
Earlier Homo
Paranthropus
Australopithecus
(Far East to the Americas)
(East Indian Islands to Australia)
2nd DIASPORA FROM AFRICA:
Out of Africa Model
Multi-regional Model
(India to Far East & East Indian Islands)
(Africa to Near East & Europe)
1st DIASPORA FROM AFRICA
Human Physical & Cultural Evolution in Africa only
STONE AGE
LATER STONE AGE
MIDDLE STONE AGE
EARLIER STONE AGE
IRON AGE
Later Iron Age
Earlier Iron Age
HISTORICAL PERIOD

Extracts from the

NATIONAL HERITAGE RESOURCES ACT (NO 25 OF 1999)

DEFINITIONS

Section 2

In this Act, unless the context requires otherwise:

ii. "*Archaeological*" means –
- a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10 m of such representation;
- c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic,... and any cargo, debris, or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation.

viii. "*Development*" means any physical intervention, excavation or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –
- a) construction, alteration, demolition, removal or change of use of a place or structure at a place;
- b) carrying out any works on or over or under a place;
- c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
- d) constructing or putting up for display signs or hoardings;
- e) any change to the natural or existing condition or topography of land; and
- f) any removal or destruction of trees, or removal of vegetation or topsoil;

xiii. "*Grave*" means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;

xxi. "*Living heritage*" means the intangible aspects of inherited culture, and may include –
- a) cultural tradition;
- b) oral history;
- c) performance;
- d) ritual;
- e) popular memory;
- f) skills and techniques;
- g) indigenous knowledge systems; and
- h) the holistic approach to nature, society and social relationships.

xxxi. "*Palaeontological*" means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trance;

xli. "*Site*" means any area of land, including land covered by water, and including any structures or objects thereon;

xliv. "*Structure*" means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith;

NATIONAL ESTATE

Section 3

1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

2) Without limiting the generality of subsection 1), the national estate may include –
- a) places, buildings, structures and equipment of cultural significance;
- b) places to which oral traditions are attached or which are associated with living heritage;
- c) historical settlements and townscapes;
- d) landscapes and natural features of cultural significance;
- e) geological sites of scientific or cultural importance
- f) archaeological and palaeontological sites;
- g) graves and burial grounds, including –
  - i. ancestral graves;
  - ii. royal graves and graves of traditional leaders;
  - iii. graves of victims of conflict
  - iv. graves of individuals designated by the Minister by notice in the Gazette;
  - v. historical graves and cemeteries; and
  - vi. other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- h) sites of significance relating to the history of slavery in South Africa;

i) movable objects, including –
   i. objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
   ii. objects to which oral traditions are attached or which are associated with living heritage;
   iii. ethnographic art and objects;
   iv. military objects;
   v. objects of decorative or fine art;
   vi. objects of scientific or technological interest; and
   vii. books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

STRUCTURES

Section 34

1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

ARCHAEOLOGY, PALAEONTOLOGY AND METEORITES

Section 35

3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
4) No person may, without a permit issued by the responsible heritage resources authority –
   a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
   b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
   c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
   d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may –
   a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
   b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
   c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph a) to apply for a permit as required in subsection 4); and
   d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.
6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated, serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

BURIAL GROUNDS AND GRAVES

Section 36

3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority –
   a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
   b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
   c) bring onto or use at a burial ground or grave referred to in paragraph a) or b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.
4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction of any burial ground or grave referred to in subsection 3a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection 3b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority –
   a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and

b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.

6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority –
   a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
   b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.

HERITAGE RESOURCES MANAGEMENT

Section 38

1) Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorised as –
   a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
   b) the construction of a bridge or similar structure exceeding 50 m in length;
   c) any development or other activity which will change the character of a site –
      i. exceeding 5 000 m² in extent; or
      ii. involving three or more existing erven or subdivisions thereof; or
      iii. involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
      iv. the costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
   d) the rezoning of a site exceeding 10 000 m² in extent; or
   e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

   must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.
2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection 1) –
   a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
   b) notify the person concerned that this section does not apply.
3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection 2a) ...
4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development decide –
   a) whether or not the development may proceed;
   b) any limitations or conditions to be applied to the development;
   c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
   d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and
   e) whether the appointment of specialists is required as a condition of approval of the proposal.

APPOINTMENT AND POWERS OF HERITAGE INSPECTORS

Section 50

7) Subject to the provision of any other law, a heritage inspector or any other person authorised by a heritage resources authority in writing, may at all reasonable times enter upon any land or premises for the purpose of inspecting any heritage resource protected in terms of the provisions of this Act, or any other property in respect of which the heritage resources authority is exercising its functions and powers in terms of this Act, and may take photographs, make measurements and sketches and use any other means of recording information necessary for the purposes of this Act.
8) A heritage inspector may at any time inspect work being done under a permit issued in terms of this Act and may for that purpose at all reasonable times enter any place protected in terms of this Act.
9) Where a heritage inspector has reasonable grounds to suspect that an offence in terms of this Act has been, is being, or is about to be committed, the heritage inspector may with such assistance as he or she thinks necessary –
   a) enter and search any place, premises, vehicle, vessel or craft, and for that purpose stop and detain any vehicle, vessel or craft, in or on which the heritage inspector believes, on reasonable grounds, there is evidence related to that offence;
   b) confiscate and detain any heritage resource or evidence concerned with the commission of the offence pending any further order from the responsible heritage resources authority; and
   c) take such action as is reasonably necessary to prevent the commission of an offence in terms of this Act.

10) A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the responsible heritage resources authority

APPENDIX 1A

APPENDIX J – TITLE DEED

VAN DE WALL EN VENNOTE
VAN DE WALLGEBOU
SOUTHEYSTRAAT
POSBUS 294
KIMBERLEY

BC D290/2002
GEKANSELLEER
CANCELLED
L.C.SMIT
REGISTRATEUR/REGISTRAR
21 NOV 2002

VERBIND MORTGAGED
VIR
FOR R 150 000-00

B 1577/2001
10 OCT 2001
L.C.SMIT
REGISTRATEUR/REGISTRAR

Gesertifiseer 'n ware afskrif in terme van die ... ings van
Certified a true copy in terms of the provisions of Regulation
Regulasie 65 kragtens die Registrasie van Aktes Wet, No 47
96 under the Deeds Registries Act, No 47 of 1937
van 1937.

FOR INFORMATION ONLY
SLEGS VIR INLIGTING

REGISTRATEUR VAN AKTES
REGISTRAR OF DEEDS

Registrasiekantoor
Deeds Registry

Datum/Date 16 MAY 2014

TRANSPORTAKTE

(Uit krag van 'n Prokurasie)

Opgestel deur my

Transportbesorger
GOUWS N J

HIERBY WORD BEKENDGEMAAK

T 002901/2000

DAT I NICOLAAS JOHANNES GOUWS

voor my, Registrateur van Aktes, **KIMBERLEY** verskyn het, te **KIMBERLEY** hy, die genoemde Komparant synde behoorlik daartoe gemagtig deur 'n Volmag aan hom verleen deur

MICHAEL JOHANN VLOK
Identiteitsnommer 771219 5103 083
Ongetroud

gedateer die 9de dag van MEI 2000 en geteken te UPINGTON

EN die genoemde Komparant het verklaar dat MICHAEL ~~JOHAN~~ JOHANN VLOK die ondergemelde eiendom op 21 Februarie 2000 waarlik en wettiglik per PRIVATE OOREENKOMS verkoop het en dat hy/sy in sy/haar voormelde hoedanigheid hierby sedeer en transporteer aan en ten gunste van:

NOOITVERWAG BOERDERY BESLOTE KORPORASIE
Registrasie Nr. CK2000/028457/23

die se opvolgers in titel of regverkrygendes, in volkome en vrye eiendom,

GEDEELTE 3 VAN DIE PLAAS KAFIR KRANTS NR 379

GELEE IN DIE DISTRIK HAY
PROVINSIE NOORD-KAAP

GROOT 873,7514 (AGT HONDERD DRIE EN SEWENTIG KOMMA SEWE VYF EEN VIER) hektaar

AANVANKLIK OORGEDRA ~~kragtens~~ Transportakte nr T578/1953 met Kaart wat daarop betrekking het

EN GEHOU kragtens Transportakte nr T 2365 /2000

A. **ONDERHEWIG** aan die volgende voorwaardes geskep in Akte van Toekenning (Hay Erfpagte Boekdeel 10, Folio 10), naamlik:

IV. That the Government shall always have the right to make new roads, railways and railway stations, aqueducts, dams and drains, or to conduct telegraphs over the land hereby granted for the benefit of the public, and to establish convenient outspans for the use of travellers and to enter on

the land for the purpose of digging and searching for minerals and precious stones; Provided that the Proprietor shall be entitled to be paid such sum of money in compensation, as three Appraisers, one to be appointed by each side and a third to be chosen by the two others, before proceeding to act, or any two of them, shall award.

V. That the Government shall at all times have the right of resuming the whole or a portion of the land hereby granted, if required for the working of any mine of for other public purposes on payment to the Proprietor of such sum of money in compensation as may be mutually agreed upon by the parties concerned, or failing such agreement, as may be awarded by Appraisers appointed in manner provided in the preceding condition IV.

VI. That the rights of the proprietor shall not extend to any deposits of gold, silver or precious stones, which may at any time be or be discovered, on the land hereby granted.

VIII. That the Proprietor shall allow to the public travelling along any of the roads running over the land hereby granted, the right to pass over and graze their loose cattle, horses, sheep and goats, to ean extent not exceeding Three Hundred and Seventy Seven comma Eight Three (377,83) metres on each side of any such road and to outspan, graze and water stock upon the land hereby granted.

WESHALWE DIE Komparant afstand doen van al die regte en titel wat die gesegde

Transportgewer

voorheen op genoemde eiendom gehad het, en gevolglik ook erken dat hy geheel en al van die besit daarvan onthef en nie meer daartoe geregtig is nie, en dat kragtens hierdie akte, bogenoemde

NOOITVERWAG BOERDERY BK
Registrasienommer CK2000/028457/23

die se diensopvolgers in titel of Regverkrygendes tans en voortaan daartoe geregtig is, ooreenkomstig plaaslike gebruik, behoudens die Regte van die Staat en ten slotte erken hy dat die hele Koopskat bedraend 'n som van **R200000,00 (Tweehonderdduisend rand)** behoorlik betaal is.

TEN BEWYSE waarvan ek, die genoemde Registrateur, tesame met die Komparant, hierdie akte onderteken en dit met die Ampseël bekragtig het.

Aldus gedoen en geteken op die Kantoor van die Registrateur van Aktes te **KIMBERLEY** op

2000 -09- 12

qq sy Prinsipaal/ale

In my teenwoordigheid,

REGISTRATEUR VAN AKTES

Geregistreer in die Register van
Boekdeel Folio
Klerk
Hereregtekwitansie nr. 30366 uitgereik deur die Ontvanger van Inkomste te Kimberley op 26/6/2000 vir R20000,00
Nagesien:
1. .....
2. .....