



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

FINAL ENVIRONMENTAL IMPACT 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).

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FILE REFERENCE NUMBER SAMRAD:	NC 30/5/1/1//2/12835PR

1. IMPORTANT NOTICE

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

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

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

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

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information maybe 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 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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

- (a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
- (b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- (c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- (d) determine the—
 - (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and
 - (ii) degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources, and
 - (cc) can be avoided, managed or mitigated;
- (e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- (f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
- (g) identify suitable measures to manage, avoid or mitigate identified impacts; and
- (h) identify residual risks that need to be managed and monitored.

ABBREVIATIONS AND ACRYNOMS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BH: Borehole
CMA: Catchment Management Agency
CMAs: Catchment Management Agencies
CRM: Cultural Resources Management
DEA: Department of Environmental Affairs
DMR: Department of Mineral Resources
DMS: Dense Medium Separation
DWA: Department: Water Affairs
DWS: Department of Water Affairs and Sanitation
EC: Electrical Conductivity
EIA: Environmental Impact Assessment
ELWU: Existing Lawful Water Use
EMPR: Environmental Management Programme Report
ESA: Early Stone Age
GA: General Authorisation
GN: Government Notice
GPS: Global Positioning System
HIA: Heritage Impact Assessment
HIR: Heritage Impact Report
I&AP: Interested & Affected Party
IBA: Important Bird Area
LIA: Late Iron Age
LSA: Later Stone Age
MAE :Mean Annual Evaporation
mamsl: metres above mean sea level
MAP: Mean Annual Precipitation
MAR: Mean Annual Runoff
MCM: Million cubic metres
MIA: Middle Iron Age
MPRDA: Minerals and Petroleum Resources Development Act, 2002
MSA: Middle Stone Age
NEM:WA: National Environmental Management: Waste Amendment Act, 2008
NEMA: National Environmental Management Act, Act, 1998(Act 107 of1998) (as amended)
NGDB: National Groundwater Database
NHRA: National Heritage Resources Act
NWA: National Water Act, 1998 (as amended)
PASA: Petroleum Agency South Africa
PHRA: Provincial Heritage Resources Authority
PSSA: Palaeontological Society of South Africa
RoD: Record of Decision
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency
SWL: Static Water Level
TMM: Trackless Mobile Machinery
TDS: Total Dissolved Solids
WMA: Water Management Area
WUL: Water Use Licence

PART A

SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: M A Golaith

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)

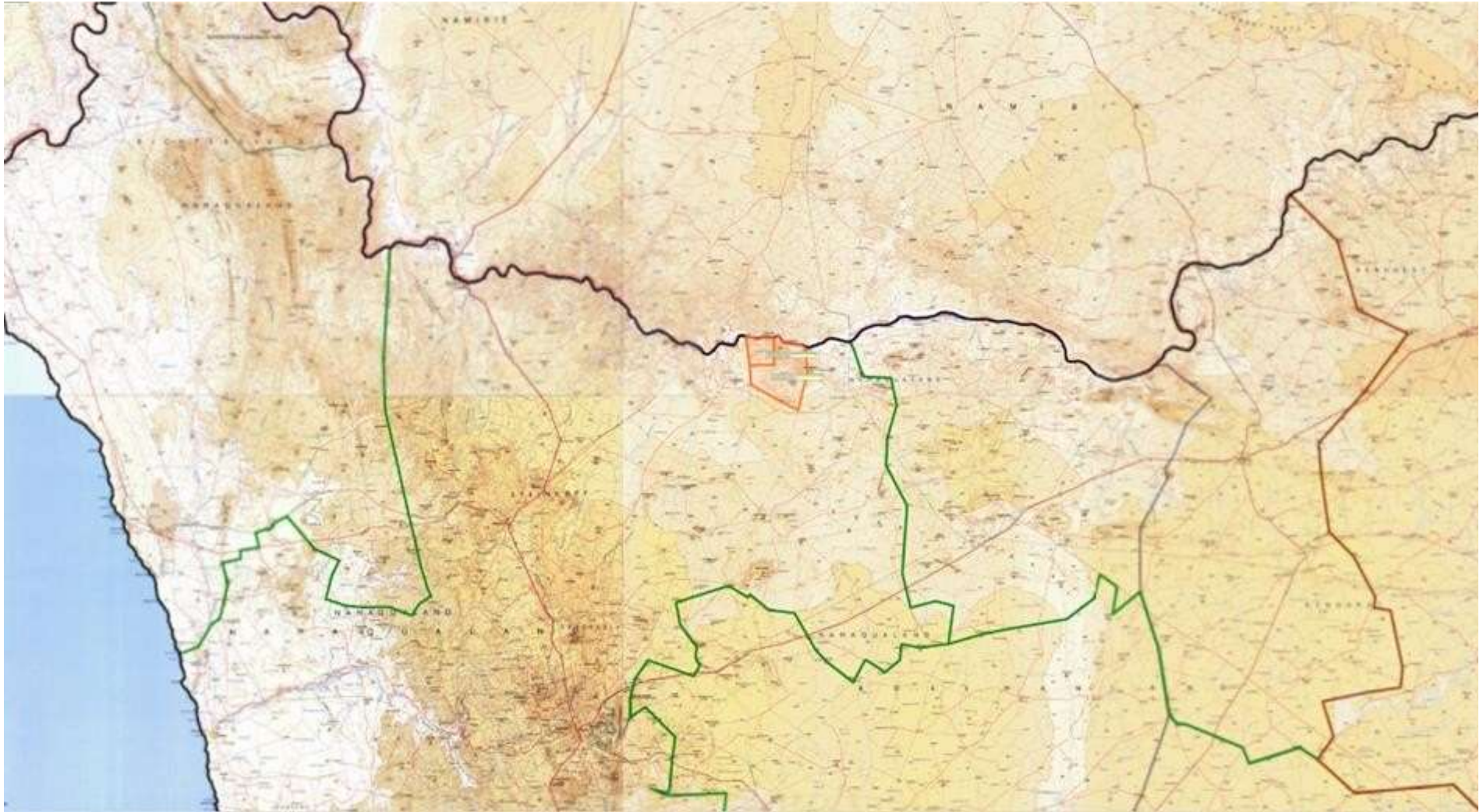
See Curriculum Vitae of M A Goliath as **APPENDIX 1**

b) Description of the property.

Farm Name:	Farms Ramons Drift 24 and Hom 25
Application area (Ha)	15426. 3360 ha
Magisterial district:	Namaqualand
Distance and direction from nearest town	110 km North North-East from Sprinbok, Northern Cape, Province of South Africa
21 digit Surveyor General Code for each farm portion	110 km North North-East from Sprinbok, Northern Cape, Province of South Africa

c) Locality map

(show nearest town, scale not smaller than 1:250000). See APPENDIX A



(i) Listed and specified activities

<p>NAME OF ACTIVITY</p> <p>(E.g. For prospecting - drill site, site camp, ablation 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, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>Aerial extent of the Activity</p> <p>Ha or m²</p>	<p>LISTED ACTIVITY</p> <p>(Mark with an X where applicable or affected).</p>	<p>APPLICABLE LISTING NOTICE</p> <p>(GNR 544, GNR 545 or GNR 546)</p>	<p>WASTE MANAGEMENT AUTHORISATION</p> <p>(Indicate whether an authorisation is required in terms of the Waste Management Act).</p> <p>(Mark with an X)</p>
<p>Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Development Act, 2002 (Act No.28 of 2002), including-</p> <p>(a) associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource: or</p> <p>(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</p> <p>(Activity 20 of Listing Notice 1</p>	<p>15426. 3360 ha lodged for the surveyed portion only.</p>	<p>X</p>	<p>GNR 327 Ln 1, Activity 20</p>	
<p>The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including-</p> <p>(a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource: or</p> <p>(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</p> <p>(Activity 19 of Listing Notice 2)</p>	<p>15426. 3360 ha lodged for the surveyed portion only.</p>	<p>X</p>	<p>GNR 325 Listed 2, Activity19</p>	

Activity 27 of GNR 327 The clearance of an area of 1 hectares 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 (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	15426. 3360 ha lodged for the surveyed portion only.	X	GNR 327 LN 1 Activity 27	
Activity 25: “The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.”	Chemical toilets and wash bays for the site.	X	NEMA: LN1 (GNR 327)	
Activity 12 : “The development of- (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square meters in size; (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square meters in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size;	Clean and dirty water systems on the site. It is anticipated that the operations will establish storm water control	X	NEMA: LN1 (GNR 327)	
Regulation GNR 704, published on 4 June 1999 in terms of the National Water Act (use of water for mining and related activities)	berms and trenches to separate clean and dirty water on the prospecting site			

(ii) Description of the activities to be undertaken

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

Prospecting will be carried out in the following manners:

Methodology and Technology

Minerals:

- Amethyst (GAt)
- Aquamarine (GAq)
- Citrine (GCi)
- Diamond Alluvial (DA)
- Feldspar (GFs)
- Gemstone (GS)
- Opal (GOp)
- Quartz (GQ)
- Rose Quartz (GRq)
- Tourmaline (GTm)

Minerals as per SAMRAD

FCL (Felicity Cecelia Links) proposes to undertake Prospecting and Related Infrastructural Activities on farms Ramons Drift 24 and Hom 25, situated approximately 110km northwest from Springbok, Namaqualand in the Northern Cape, Province of South Africa. The prospecting activities will entail the following as detailed below:

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

(i) Desktop Study (1 -6 months)

A first phase of geological investigations comprises of collecting various geological literature relating to the area of interest. This literature may be obtained from relevant books and journals. Information can also be inquired from companies which have previously mined in the area. Satellite images as well as geological maps will be used to identify possible prospecting target areas.

(ii) Geological Mapping with aid of UAV (1month)

To more accurately identify prospecting target areas, an Unmanned Aerial Vehicle (UAV) or commonly known as a drone will be employed. It has different sensors integrated into the drone, making this more productive and environmentally friendly (no contact with the ground). It is an automated system, with a programmed flight plan, allowing for large areas to be covered in a short period of time. The intention is also to reduce drilling needed (and hence costs).

The system also provides a cost-effective way to make mineral exploration in new, unexplored areas.

The flight is controlled by an autopilot. The autopilot records flight data including GPS time and position (latitude and longitude), the orientation (roll, pitch and yaw), and barometric pressure. The real-time flight is controlled by PC software via a telemetry (radio) link. The nominal accuracy of the GPS position is about ± 1.5 m.

The magnetic field is measured using a digital 3-component flux-gate magnetometer. The magnetometer data (X, Y, Z components and total field), are recorded by the company's own data logger. The GPS time and position are synchronized with the autopilot.

A base station located near the mobile telemetry/control station measures the time variation of the total magnetic field using a proton precession magnetometer.

This allows for more cost effective (i.e faster and more versatile (e.g. swamps or rivers are no obstacles for drones) and environmentally friendlier (no impact on the ground) exploration. Challenges remaining are the limited payload (requiring survey equipment to be modified light weight), the limited flight time (requiring comprehensive planning for larger survey areas), weather (i.e. wind) and different aviation

policy requirements in different countries.

Impact on the mining value chain

- EXPLORATION (incl. permitting)

EXPLORATION

- safe and fast remote exploration
- reduced environmental impact

The data so obtained would be incorporated into a drilling plan and the final bulk sampling positions.

Mapping

Thorough filed mapping of the surface geology will be done in order to narrow down target areas for determining the location of the ore body. Field mapping and satellite images makes it possible to eliminate certain areas and focus on the possible ore deposits.

Geological Report (months 44-60)

This written report comprises of all prospecting results as well as recommendations for future activities. When the prospecting period is done decisions will be made regarding the necessity of future prospecting or application for a mining right

(ii) DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc)

Bulk Sampling (month 7-36)

Bulk sampling is done through opencast pitting by using machinery as well as labour. Excavators are used to remove the overburden as well as ore. The dimensions of the excavations for the diamond prospecting will be 4 pits of dimension 50m X20m in the targeted areas. The deviation to this bulk sampling program could be when a particular line of interest is encountered and the prospecting be done along a channel. The ore is then transported to the plant by means of Dump Trucks. The alluvial ore is introduced to the Plant Receiving Bin by means of a Load Haul Dumper. The oversize material (+100mm) is used as backfill in the opened-up excavation areas. The overburden is placed on site where it is later backfilled into the pit, i.e. formations will be placed back in the same sequence it was extracted. The topsoil is then introduced to complete the rehabilitation process. Rehabilitation is thus continuous.

The ore is treated in a processing plant (Fig4) that consists of 1 x 6 feet rotary pan. These pans operate on the principle of density of which the medium is puddle. The concentrate will report to a recovery house, and the diamonds recovered through grease tables.

Diamond Prospecting

Production Tonnage Calculation

Waste to ore expected to be 4:1

4 Pits with dimension 50mx20mx6m inclusive of waste=24000m³

Volume ore: 4800 m³

Volume Overburden:19200 m³

Density ore:1.8
 Density overburden: 1.2

Tonnage Ore: 8640
 Tonnage Overburden:23040
TOTAL TONNAGE: 31 680

Semi-Precious Stones Prospecting

The minerals occur in veins in the hills on the prospecting area. It occurs as outcrops on the surface area. This will be labour intensive as no mechanised mining method would be employed. No stripping would be required.

It is anticipated that 800 sampling points of dimension 1m length x 0.2m x 0.2m would be made with a density of 2.0
 Total Volume: 32m³
 Total Tons: 64

Combined Total Volume: 24 064 m³

AERIAL DISTURBANCE OF PROSPECTING: 1160m²

Labour: Semi- skilled: 12 Employees:
 Skilled: 3 Employees
Total Employees: 15

Final Rehabilitation

Rehabilitation of trenching will be done immediately as each excavation is completed. Once bulk sampling is completed, the processing site will also be rehabilitated. Access road rehabilitation is carried out when all prospecting phases are completed at the end of the bulk sampling phase. Rehabilitated sites will be monitored to ensure vegetation growth re-occurs.

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);	REFERENCE WHERE APPLIED (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 Liscence 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 Prospecting Right application	A Prospecting Right has been applied for to DMR 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 Management: Air quality Act (Act 39 of 2004)	Section 32: Control of dust 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)	Section 32
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)	
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.	No Application will be lodged with the Department Water and Sanitation on approval of the EMPr.
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.	Consult 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 licence 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 control 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 constitute 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 not 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 20 jobs during the course of prospecting 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.	The project will result in the development of support infrastructure such as roads and pipelines. The local community and authorities will have access and use of these infrastructure.

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).

Diamonds remain one of the most sought gemstones in the world. This make this project very lucrative as the diamond market experience very little fluctuation. The demand currently and for the new future is in the increase due to the Corona pandemic.

The increasing markets in Asia seeking semi-precious stones is ever expanding. Rose Quartz, Tourmaline, Sugilite, Quartz and Aquamarine are precious and semi-precious stones 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 diamonds and pegmatites are known to occur. It also has the added advantage of providing much needed employment opportunities for the Goodhouse town 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 prospecting 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 prospecting operation will provide employment to 12 semi-skilled employees from the local and surrounding communities of which the labour sending area can be considered to be from Goodhouse up to and including Springbok.

The study area further does not have any human settlement that will impact on the people and their activity. 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 prospecting activities include:

- ✓ Employment through the life of the prospecting program.

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

The need and desirability of the proposed prospecting 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. Prospecting is the research, planning and development phase of one or more mining projects. It is the pre-cursor 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 prospecting, prospecting also includes, amongst others, infrastructural, environmental, socio-economic, financial evaluation and metallurgical studies thereby encouraging the national research and educational sectors.

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 prospecting project in the proposed area with no human settlements and active agricultural activities is highly ideal. The prospecting activity will seek to achieve the value of site ore reserves which would possibly result in an establishment of a mine should the prospecting results be positive.

The knowledge gap about site economic geology would be closed and thereafter a sustainable land use can be established including mining (provided prospecting results are positive).

The prospecting activities will determine the grade and also the mine life span from which socio-economic benefits can then be realised. Should the mining be found to be viable and outweighing agricultural returns in terms of jobs, community socioeconomic standards after prospecting, thus benefitting the Local Community and also making contribution to the National GDP, then mining rights application can be initiated of which the environmental studies will then be undertaken as required by all relevant Legislations to ensure that the natural environment is also protected.

Analysis of the ‘desirability’ of the project

Prospecting activities are informed by the existing knowledge regarding buried coal reserves and as such there is always a high possibility that after prospecting a mine will be established. There are lesser returns from prospecting activities as it is not labour intensive and also a short-term project. However, positive outcomes from the prospecting activities would result in mine establishment. Mining is an integral contributor to South African GDP and Labour Force. According to Northern Cape CBA Map of 2016 about 15% of the site is located on the Ecological Support Area (ESA). However, it should be noted that prospecting activities are of short- term

Duration and impacts are minimal and can be managed and reversed. The site is an ideal prospecting area based on the following aspects:

- No human settlements areas,
- No active economic activities;
- Low environmental sensitivity; and
- High confidence on the presence of ore deposits.
- Prospecting including invasive activities (Establishment of Access Roads, Trenching, Drill Pad

Area and the actual drilling) unlike mining have manageable environmental impacts. 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). Although the precise locations of drilling area are unknown, they will not be established within the buffers of sensitive areas.

No access roads will be created.

Prospecting itself is a capital-intensive venture and requires the financial commitment of investors, which is high risk. 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. Auxiliary benefits of prospecting include contributions to local economies, and communities, tax benefits and occasionally royalties.

While geological studies are integral to prospecting, prospecting also includes, amongst others, infrastructural, environmental, socio-economic, financial evaluation and metallurgical studies thereby encouraging the national research and educational sectors.

g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved 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.

The development footprint on the farm will have the least disturbance and risk to the environment. It will be a low impact operation with minimal destruction to the fauna and flora, least impact on noise dust pollution, no access and on-mine roads are required and no pollution to any water source.

There is no alternative prospecting method which will be more effective in terms of cost and protection to the environment.

The method of opencast trenching with continued backfill (oversize material) will ensure that the rehabilitation program is kept within the specified limitations. The following factors were considered for the infrastructure location on site

Weighing Factors	Consideration	Preferred Site	Any alternative
Geology	Geological formation	✓	✓
Site environmental sensitivity	Impact on the natural environment of the activity: Fauna and Flora, Noise and dust pollution, surface and ground water pollution.	✓	Negative
Landowner activity	Land capability and use after mining. Relation of prospecting activities to the landowner homestead	✓	Negative
Topography	Project layout and infrastructure development	✓	
Human Settlement	No human settlements exist on the farm or planned in the future therefor total avoidance of any conflicts.	✓	

Logistical Arrangements	Availability of road infrastructure.	✓	Negative
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a) Full description of the process followed to reach the proposed preferred alternatives within the site.

Alternatives were chosen based on the consideration of both geological attributes and site environmental sensitivity. Geological attributes were determined with the use of geological maps. Also, the local geology determines the type of technology to be used, such as Geological core drilling and pitting or trenching with back tractors. A comparison of cost-benefit of alternatives chosen was done to choose the most cost-effective methods that are environmentally sound. Existing infrastructure was also considered. Areas that need protection would be excluded from the targeted sites in the demarcation process (Orange river). Existing infrastructure that could be of use was also considered such as farm roads to ensure minimal impact on the environment.

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 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 was preferred based on the geological data which from the desktop standpoint acknowledges the potential presence of mineral resources underneath and for the pegmatites On the surface outcrops.

There are no human settlements within the proposed site which would often create social impacts should resettlement be considered. The properties are identified as Hom 25 and Ramons Drift 24.

NO OTHER SITES WERE ASSESSED.

(b) The type of activity to be undertaken;

The prospecting activities to be undertaken were assessed and chosen based on site geological setting. The type of geophysical survey method and and trenching positions will be assessed for their access against the type of geological formations, the burial depth of the geological strata of interest (alluvial diamond resources and pegmatite veins outcrops).

The type of prospecting activities was also influenced by environmental sensitivity of the site, thus avoiding the features such as streams. In sensitive areas non-invasive activities will be preferred over invasive activities.

(c) The design or layout of the activity;

The design of the activity in this project refers to the locations of the bulk sampling programme. The bulk sampling areas should be located away from sensitive features, and also determined by the distribution and extent of the mineral resources. The bulk sampling areas will be located such that the diamond gravels will be intercepted based on the existing site geological data and geophysical survey outcomes. For the application the trenching areas will be based on geology, topography and environmental sensitivity.

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

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

Local geological strata

The geological settings (rock types) and depth of burial determines the type of geophysical methods that are most likely to be successful therefore the technology that goes with such methods.

Mineral Resource burial depth

Technology choice is also based on the depth burial of the targeted stratum i.e. the preferred trenching equipment must be successful at site specific burial depth.

Rock Strength

The trenching equipment must be able to cut through site geological strata to reach buried alluvial gravels.

The operational aspects of the activity

The prospecting activities are carried out in phases with each subsequent phase dependent on the success predecessor. Therefore, a strict operational scheduling must be adhered to.

Other operational aspects:

Stockpiles

The topsoil removed would be kept on a topsoil stockpile (500m² footprint) for final rehabilitation of the excavated areas. No specific technology is used other than ensuring no contamination of the topsoil. If this activity is not implemented the prospecting activities cannot continue fluently affecting the cost effectiveness of the prospecting operation. The option of not implementing the activity cannot be considered.

No Alternative can be considered.

Waste Rock

The screened boulders and large rocks would be kept separate and use for continues backfill in the excavated areas (footprint 1000m²). The specific design of this activity is dependent on the amount of waste rock generated. No technology is applicable to this activity as this will only be the storage of waste rock. The option of not implementing the activity cannot be considered as the waste rock is the first process in the rehabilitation programme.

Dams

The primary operational aspect of the activity is to store water for dust suppression for the mobile plant and wetting down the roads.

During this final EIA/EMPr the alternative of using a Jo-Jo tank of 10 000l have been considered and found to be the most suitable for this application of prospecting. The tank would be refilled with municipal water and the bowser itself act as water holding facility.

Prospecting Excavations (Bulk Sampling)

One block of 10m x10 m is proposed for optimal prospecting. The positions and exact extent are not known at this point. This would be guided by the actual results of the drilling and other geological examinations done.

The technology used in this activity will be open pit mining by means of benching through the employment of Excavators to make the excavation and a Front End Loader that will load the material onto Dump Trucks for transportation to the treatment plant which is situated on the plant permit area.

The topsoil and overburden will be removed where necessary and stored near the excavation for easier rehabilitation activities. The manganese material is crushed and screened and transported to the central production stockpile.

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

Mobile Office Site

The office block will be installed and have an approximate footprint of 0.0040 ha. 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 prospecting premises for proper managing, activity regulation, accident and damage control as well as optimizing productivity.

The alternative of considering hiring of an office facility in Goodhouse could not be achieved as no such facility is available.

Ablution Facility

Contractual agreements will be made and basic flushing chemical toilets installed. These facilities are to support the sanitation protocol of the prospecting employees. During the prospecting 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

The alternative to permanent structure on site is not feasible and is impracticable.

Workshop/ Vehicle Storage

Footprint 0.03 ha

The parking area is designed to house designated vehicle parking, concrete constructed wash-bay, vehicle maintenance workshop and an auto parts storage facility.

Drip pans will also be readily available for vehicles during off-time. No other technologies will be used during this activity

The parking area will be sectioned and demarcated for the various activities. All vehicles inclusive of visitors' vehicles, employee vehicles and heavy vehicles will be parked in this

area within their different sections. All vehicles will however be required to adhere to the reversed parking policy for the safety of all vehicles in the case of an emergency.

Should this activity not be implemented pollution and chemical spill control cannot be optimally managed as well as the informal parking of other normal vehicles can lead to difficult driving environment for heavy vehicles. For this reason and legislative requirements this activity cannot be excluded as a prospecting related activity and thus planned to be implemented during the construction phase of the prospecting activities.

Diesel Storage

The diesel storage facility will be active for the duration of the prospecting activity and have a footprint of 0.00032 ha.

The technology used shall be of the highest standards provided by the contracting diesel/fuel agency. The actual volume of the tank is currently unknown, but it is compulsive that the operation is supplied with a diesel tank already equipped with a leak-proof bay to prevent any ground contamination should the tank be leaking by fault or bursting.

Diesel will be kept within these containers for re-fuelling purposes during the prospecting activities. The contracting agency will be refilling these tanks on a regular basis and only then will the tank be inspected and maintenance procedures carried out.

Machinery will be parked on a cement slab net to the tank for re-fuelling activities. This cement slab shall be contracted at a gradient with a run-off channel leading to a sump for impact prevention should any accidental spillage occur. The sump will also be cleaned and maintained on a regular basis by the contracting agency. Taking the proximity of the town into consideration the option on not implementing the activity was considered but after careful consideration regarded as a no-go option.

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.

No practical alternative exists to this arrangement

Water requirement:

The water requirement can be met through sourcing water from the local municipality connections. No new boreholes will be drilled on site for water sourcing. A consent will be obtained from the municipality for water usage. The water usage onsite is not expected to trigger the NWA Listed activities which would require water use application.

Waste Management:

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

Access Roads:

The existing access tracks on site will be used to access trenching points. No new roads will be developed without prior communication with the landowner.

(e) 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. The aim of mineral resources prospecting is to establish the presence, extent and grade of ore resource on site and should the activity be not implemented this information will remain unknown. There is high potential for ore reserves in the proposed site and should the project not be authorised the potential socioeconomic benefits associated with mining will not be realised.

The local economy being is supported by very few economic activities and therefore have very limited job opportunities. The success of prospecting activities will boost local economy not only through job creation but demand for secondary services as well such as food supply boosting local SMMEs in Goodhouse.

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 has been undertaken as prescribed by NEMA (EIA Regulations 2014) is in process (PPP)

(1) ADVERTISEMENT

An advert has been placed in a local newspaper as notification to Interested and Affected parties to where the EIA/EMPr can be located for input. **(APPENDIX B)**

(2) PUBLIC NOTICE BOARD

A noticeboard of minimum dimensions 40cm by 60cm have been placed around the farm as no fence exists. Notice boards have also been placed at the Nama Khoi local Municipality in Springbok, the Community Centres in Steinkopf and Goodhouse.

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

The EIA/ EMPr have made available to the public for comments and input and will be available for 30 days at the Nama Khoi Local Municipal office in Springbok, the Community Centre in Steinkopf and Community Centre in Goodhouse A public meeting have been conducted during the EIA and EMPr phase and held in Goodhouse-Minutes of the meeting is attached as per **APPENDIX C.**

(4) DATABASE OF INTERESTED AND AFFECTED PARTIES

A database of Interested and Affected parties identified and consulted with 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

Hand delivered hard copies have delivered to the organs of state. **APPENDIX F**

(8) PUBLIC AND OTHER INTERESTED AND AFFECTED PARTIES

This EIA and EMPr have been made available to the public for comments and input and will be available for 30 days at the Nama Khoi Local Municipal office in Springbok, Community Centre in Steinkopf and Community Centre in Goodhouse.

iii) **Summary of issues raised by I&As**
 (Complete the table summarising comments and issues raised, and reaction to those responses)

Interested and Affected Parties		Date	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.		Comments Received			
<u>AFFECTED PARTIES</u>					
Landowner/s					
Department Housing and Local Government	X		None received		
Lawful occupier/s of the land			None received		
Department Housing and Local Government	X				
Landowners or lawful occupiers on adjacent properties			None received		
Municipal councillor					
Municipality	X		None received		

Hand delivered copy of EIA/EMPr.					
Telephone calls as follow up Ward Councillor					
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
DWS	X		None received		
Land Department of Agriculture, Land Reform and Rural Development	X		None received		
Communities					
Present at Public meeting	X		Jobs-See minutes of Public Meeting	Consideration of jobs to the local community	
Dept. Land Affairs Land Claims Commissioner			.		
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		No claims registered as per correspondence APPENDIX E		
Traditional Leaders					
Dept. Environmental Affairs	X		None received		
Other Competent Authorities affected					
<u>OTHER AFFECTED PARTIES</u>					
		X	The majority of the questions were centered on job creations and how the community will benefit from such an initiative.	Mr. Links explained that the employees would be sourced from Goodhouse, as the project does not require employees with special skills except for the surveyor, geologist, medical practitioner and	

		<p>The members however reminded the Chairperson to ensure that the job opportunities must be made available to the local community.</p>	<p>occupational hygienist which will be on a contract basis but will be from the Nama-Khoi local municipal area.</p> <p>Local businesses would also benefit as the supplies for the operation would be bought locally.</p> <p>The response from the meeting is that the project is viewed as beneficial to the community as it will provide much needed jobs and skills development.</p> <p>Mr. Links further enquired if any objections or concerns should be noted to which none was entered.</p>	
<u>INTERESTED PARTIES</u>				
	X	<p>The majority of the questions were centered on job creations and how the community will benefit from such an initiative.</p> <p>The members however reminded the Chairperson to ensure that the job opportunities must be made available to the local community.</p>	<p>Mr. Links explained that the employees would be sourced from Goodhouse, as the project does not require employees with special skills except for the surveyor, geologist, medical practitioner and occupational hygienist which will be on a contract basis but will be from the Nama-Khoi local municipal area.</p> <p>Local businesses would also benefit as the supplies for the operation would be bought locally.</p> <p>The response from the meeting is that the project is viewed as beneficial to the community as it will provide much needed jobs and skills development.</p> <p>Mr. Links further enquired if any objections or</p>	

			concerns should be noted to which none was entered.	
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- iv) **The Environmental attributes associated with the development footprint alternatives.** (The environmental attributed described must include socio- economic, social, heritage, cultural, geographical, physical and biological aspects)

(1) Baseline Environment

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

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

Key aspects of the baseline environment that are likely to impact on the scope of the impact assessment and management measures that are implemented as well as project decisions regarding alternatives are listed below.

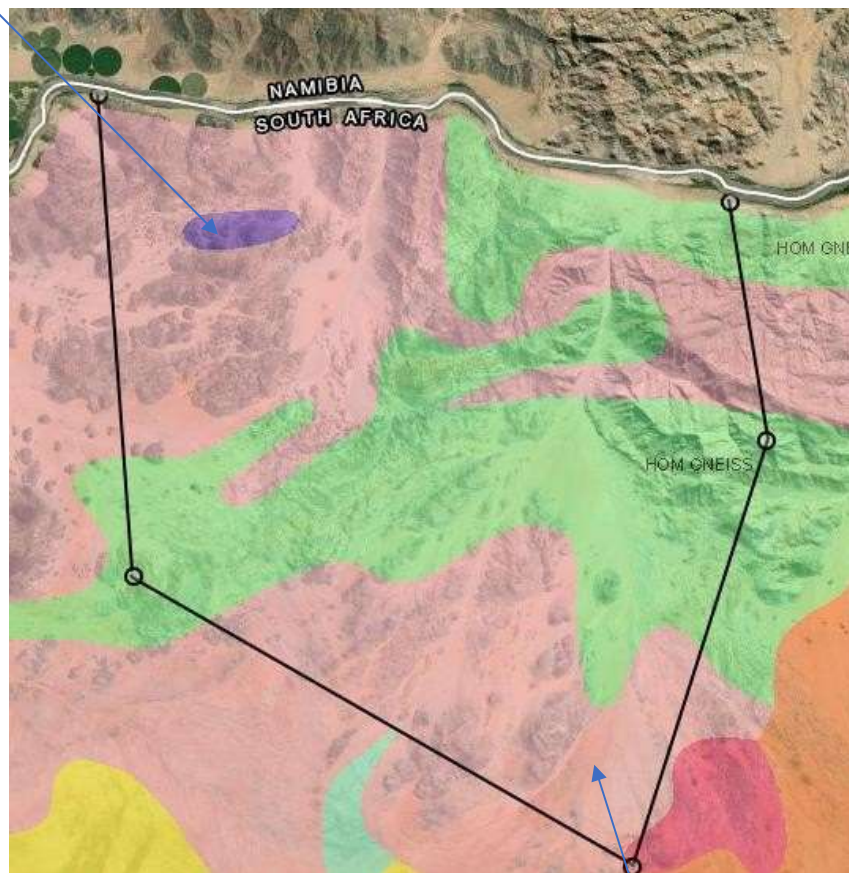
Topography

The mean elevation on the study area on the most northern part of the study area at Goodhouse is at 231maml and increasing to the west southerly hills Hahn Romansberg 672 maml.

Geology and Soils

Geology & Soils Mostly Quaternary sediments (sand, calcrete) with some contribution of the Pre-Pleistocene Kalahari Group sediments in the east. Typically the surface is covered by sands >300 mm deep, forming dunes in places. Af land type dominates.

Ramansdrif Subsuite



Goodhouse Subsuite

The study area has the presence of the Ramansdrif, Goodhouse and the Hom gneiss subsuites.

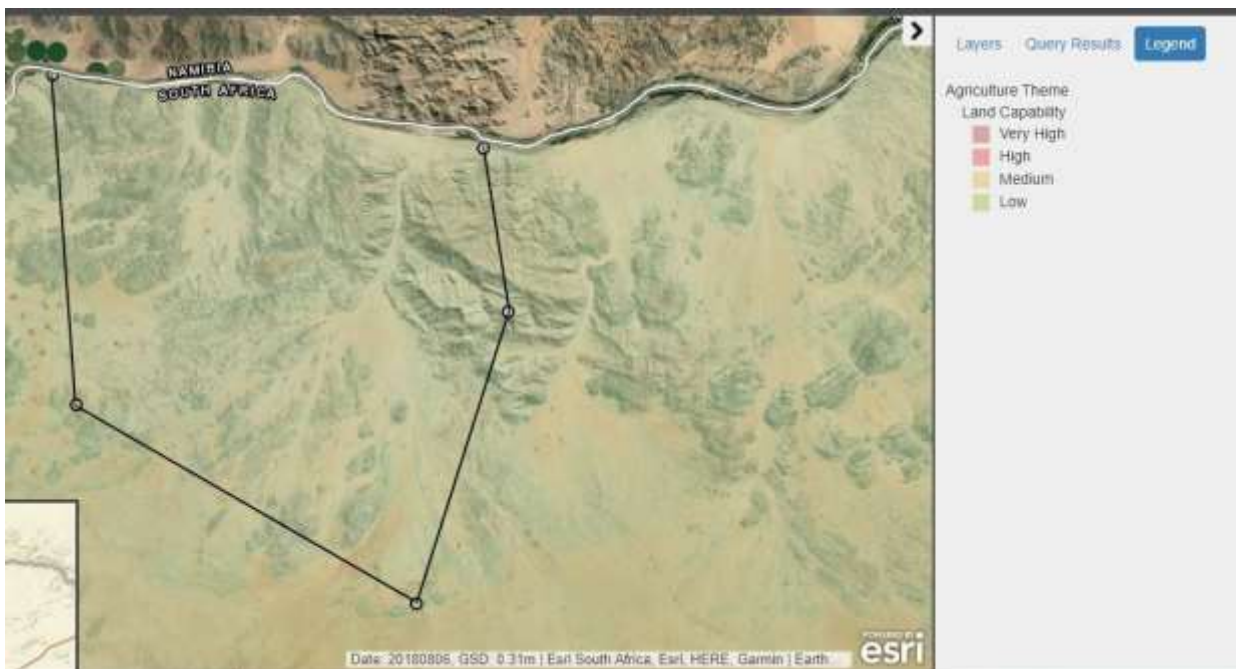


Photo 1: taken by EAP

Land Capability

Land capability is the ability of land to support a given land use without causing damage. Land capability class definitions area as follows: Class I contains soils having few limitations for cultivation; **Class II** contains soils having some limitations for cultivation; **Class III** contains soils having severe limitations for cultivation; **Class IV** contains soils having very severe limitations for cultivation. Study area is Class IV. Class IV contains soils having very severe limitations for cultivation

Figure 5

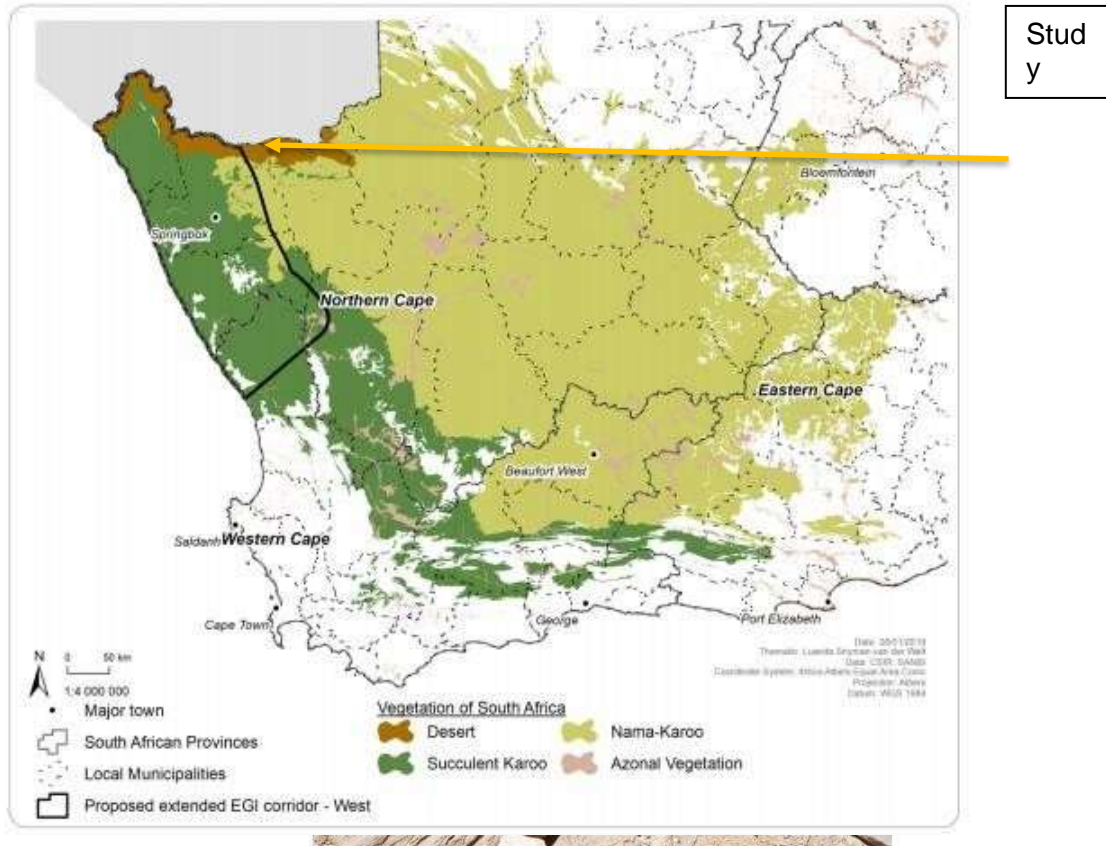


Regional Biodiversity

This section taken from Strategic Environmental Assessment for the Expansion of Electricity Grid Infrastructure in South Africa-Integrating Author Luanita Snyman-Van der Walt and Contributing Authors Lizande Kellerman, Simon Todd

The study area falls within the Desert Biome.
Rutherford and Westfall (1986) and Rutherford (1997)

Figure 6



Taken from Strategic Environmental Assessment for the Expansion of Electricity Grid Infrastructure in South Africa

The Desert Biome is found under very harsh environmental conditions which are more extreme than those found in the Succulent Karoo Biome and Nama-Karoo Biome. The climate is characterized by summer rainfall, but high levels of summer aridity. Mean annual rainfall is from approximately 10mm in the west, to 70 or 80mm on the inland margin of the desert. In reality, the rainfall is highly variable from year to year. Most true desert in southern Africa is found in Namibia, although an outlier does occur in a small part of South Africa, mainly in the Springbokvlakte area of the Richtersveld in the lower Orange River valley.

The vegetation of the Desert Biome is characterized by dominance of annual plants (often annual grasses). This means that after a season with rarely abundant rains, the desert plains can be covered with a sea of short annual grass. Whereas in more normal years, the plains can appear bare with the annual plants persisting in the form of seed.

Perennial plants are usually encountered in specialized habitats associated with local concentrations of water. Common examples of these are broad drainage lines or washes. The well-known shrub, *Welwitschia mirabilis*, of the Namib Desert, occurs in such areas. The perennial grass, *Stipagrostis sabulicola*, occurs sporadically on large dunes which contain substantial stores of water. Nearer the coast in Namibia, the role of coastal fog also governs distribution of certain species

commonly associated with the desert.

The Desert Biome includes an abundant insect fauna which includes many tenebrionid beetles, some of which can utilize fog water.

State of the Desert Biome

The Desert biome, interfacing with the highly diverse and species-rich Succulent Karoo biome, is considered to be one of the most biologically diverse and environmentally sensitive deserts in the world.

Although the region is sparsely populated with only few small villages, communal livestock farming (mainly sheep and goats) across large areas of the biome has had a significant impact on vegetation cover. Overgrazing due to overstocking, intensified by extended periods of drought, especially surrounding some permanent settlements in the Richtersveld, resulted in severe deterioration of veld condition, and in some places total desertification (Hoffmann et al., 1999; Jürgens, 2006; Hoffmann et al., 2014). Commercial scale crop farming along the lower Orange River has also substantially increased during the past century now having extensive areas cultivated with inter alia vineyards, dates and subtropical fruit orchards. In addition to irrigation agriculture, open-cast diamond mining and exploration activities, mostly along the lower Orange River from Alexander Bay to Swartwater, have largely scarred the desert landscape adding to the human impact on this sensitive ecosystem.

Although alien invasive plants such as *Prosopis* spp., *Nicotiana glauca*, *Ricinus communis* and *Atriplex lindleyi* are a common phenomenon of dry riverbeds, drainage lines and around human settlements, its distribution has been limited by the lack of subsurface water in the greater desert area (Milton et al., 1999; Jürgens, 2006). Unfortunately, unique species richness and high levels of endemism associated with the Desert biome have also seen the illegal removal of succulents by collectors and traders (Van Wyk and Smith, 2001). So far, only approximately 22% of the Desert biome is formally protected in statutory and non-statutory reserves of which the Richtersveld National Park, the Nababieps Provincial Nature Reserve and the Orange River Mouth Provincial Nature Reserve constitute the largest area of conservation (Jürgens, 2006; Taylor and Peacock, 2018).

The average conservation target for vegetation types in the Desert biome is 32%. Other efforts to preserve this unique desert ecosystem include the Richtersveld Community Conservancy and two proclaimed National Heritage Sites, namely (i) the lichen field near Alexander Bay and (ii) the renowned population of *Aloidendron pillansii* on Cornellskop (Jürgens, 2006). Transformation of the Desert biome has so far been relatively limited despite the effect of the aforementioned impacts on desert ecosystems (Jürgens, 2006). However, rising temperatures and decreasing rainfall as a direct result of climate change could intensify desertification of the Desert biome over the next 50 years (Hoffmann et al., 1999; Rutherford et al., 1999).

Site Vegetation

The study area falls within the Eastern Gariep Plains Desert and is devoid of vegetation except for scattered bushes and certain xerophytes. The vegetation comprises typical desert shrub and desert grass, which increase in abundance towards the east and outside the bare canyon of the Orange River. The green trees are found along the banks of the Orange River, thus marking the riverbanks. These are some of the alluvial vegetation that occur with the riparian zones limited to macro-channel banks. Goodhouse comprises of scattered perennial dwarf shrubs, few scatters of the *Aloe dichotoma*. The areas between the hills are vegetated by *Stipagrotis* species in some areas, however, much flat spaces are characterised by shrubs and herbs (Mucin and Rutherford 2006). The study area is also sparsely dotted with the Sheppard's tree (*Boscia albitrunca*), *Hoodia gordonii*, *Klein longifolia*, and *Euphorbia avasmontana* (Cook 2013).



Orange River with green trees on its banks



Boscia albitrunca in open spaces that interrupt the hills



Hoodia gordonii growing on rocks.



Klein longifolia



Euphorbia avasmontana



Aloe dichotoma growing on a rocky hill.



Tree growing on bare rocks with very shallow soil.



Landscape view showing open areas between hills with vegetation patches.

Fauna

More than 60 different mammal species are known to occur in the Desert biome (UCT, 2018a).

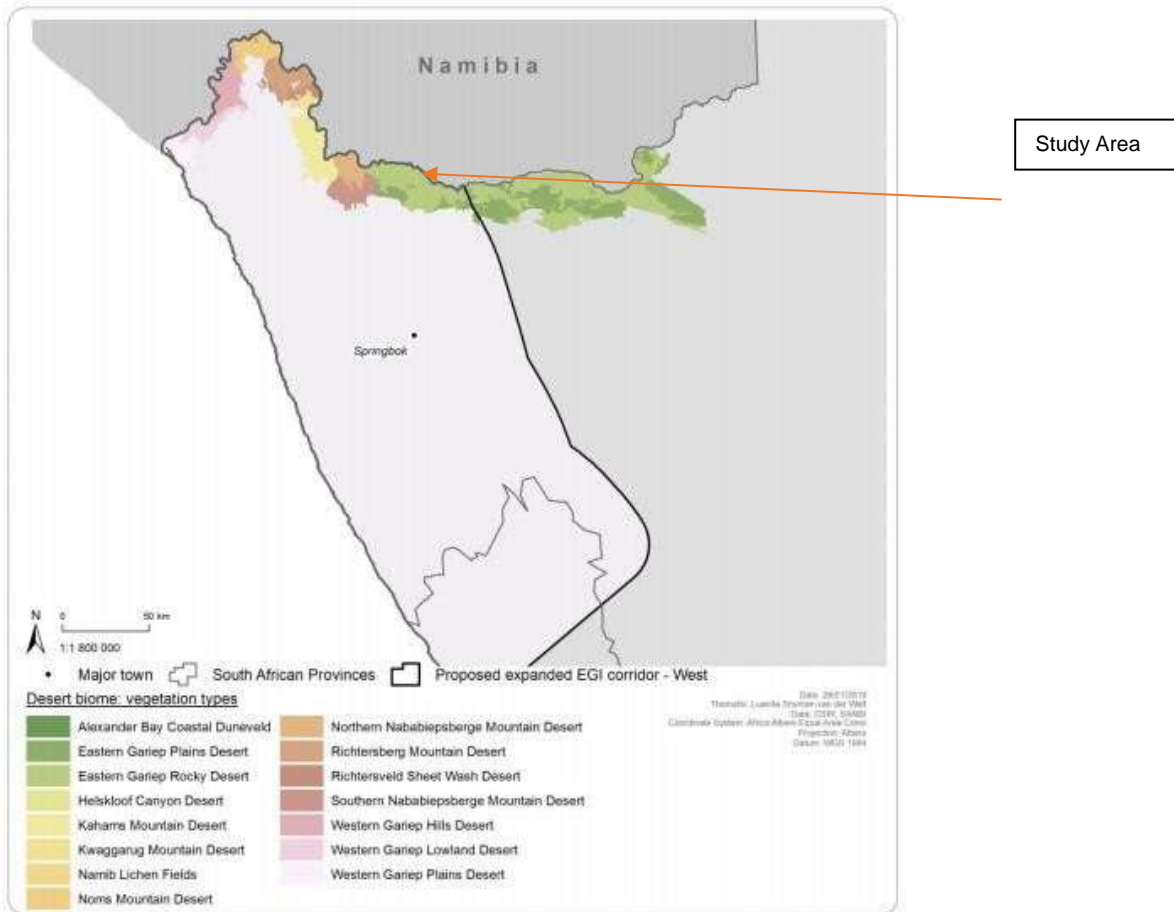
Three species are considered **Vulnerable**, namely the Hartmann's zebra (*Equus zebra* subsp. *hartmannae*), the Black-footed cat (*Felis nigripes*) and the Cape leopard (*Panthera pardus*).

A further three mammals have a **Near-Threatened** status including the Brown Hyena (*Hyaena brunnea*), the African Clawless Otter (*Aonyx capensis*) and Littledale's Whistling Rat (*Parotomys littledalei*). Antelope species common to the desert plains include Gemsbok (*Oryx gazella*), Springbok (*Antidorcas marsupialis*), Steenbok (*Raphicerus campestris*) and Kudu (*Tragelaphus strepsiceros*) (Williamson, 2010; Child et al., 2016; Walker et al., 2018).

Avifauna

The Desert biome has a relatively high bird diversity with a total of 133 species of which 12 are listed as threatened species. A tally of 212 species have been recorded in the Richtersveld National Park (UCT, 2007-present; Taylor and Peacock, 2018). An Important Bird Area (IBA) for avifauna diversity is the Orange River Mouth which is regarded as the second most important estuary in South Africa in terms of conservation importance (Taylor and Peacock, 2018). This coastal wetland near Alexander Bay received Ramsar status in June 1991 and supports more than 250 recorded bird species of which 102 are waterbirds (BirdLife SA, 2015; SARS, 2016).

Figure 7



Taken from Strategic Environmental Assessment for the Expansion of Electricity Grid Infrastructure in South Africa

The reptile diversity of the Desert biome is fairly high with about 84 species (UCT, 2018b), three of which 2 are of conservation concern.

Near-Threatened Species

These include the Near-Threatened Richtersveld Pygmy Gecko (*Goggia gemmula*).

Critically Endangered Species

Critically Endangered Namib Web-footed Gecko (*Pachydactylus rangei*).

Vulnerable Species

The Speckled Padloper (*Chersobius signatus*) (Bates et al., 2014).

A total of 13 frog species can potentially occur in the Desert biome (UCT, 2018d) of which two species are listed as being Vulnerable, namely the Desert Rain Frog (*Breviceps macrops*) and the Namaqua Stream Frog (*Strongylopus springbokensis*) ((Minter, 2004). The Desert Biome includes an abundant insect fauna which includes many Scarabaeidae and Tenebrionidae beetles. Its insect diversity further includes about 69 species of moths and butterflies, 20 species of dragonflies and 32 species of lacewings (Mecenero et al., 2013). Up to 24 scorpion species could potentially be found in this desert environment (UCT, 2018c).

Surface Water



Figure 8

Taken from CFM 2.3.4 Department of Agriculture Enterprise GIS

The Orange River forms the northern border of the study area which also forms the border between South Africa and Namibia.

Drainage lines are found on the study area which mouths into the Orange River during period of high rainfall.

Surface Water

No surface water was observed on the study area during the site visit and only occur during periods of high rainfall with fast runoff to the Orange River.

River Diversions

No river diversion to the Orange River will be made for the project activities.

Wetlands

The Orange River form the northern boundary of the study area. This area can be seen as a wetland and the prospecting activities should be placed outside of the 1:100 line.

Depth to Groundwater

Figure 9



Taken from CFM 2.3.4 Department of Agriculture Enterprise GIS

The study area has a groundwater depth of 41-50m

PRIMARY / COMPOSITE AQUIFERS

This section taken from HYDROGEOLOGY OF GROUNDWATER REGION 26: BUSHMANLAND Prepared for the Water Research Commission by J R VEGTER Hydrogeological Consultant WRC Report No TT 285/06 November 2006 (Edited M A Goliath for clarification)

Cainozoic deposits are the only formations in Bushmanland that possess meaningful primary porosity. The occurrence of water-bearing Cainozoic deposits is restricted to the Koa and Koboep / Coboop Valleys and to the larger rivers. Information on the water-bearing properties of alluvial deposits along the Orange River is lacking. Except for the lower Koa Valley Cainozoic deposits are as far as the writer is aware, not exploited on their own but always in conjunction with underlying weathered and fractured bedrock i.e. as part of a composite aquifer. Owing to a lack of information an overview is not possible of all the instances where composite aquifers are being exploited.

KOA VALLEY

Henkries spring is situated at the bottom end of the 11500 km² Koa catchment and at the upper end of the Henkries River valley where it enters the mountainous tract that borders on the Orange River. The spring issues from calcified sand. Above Henkries spring the valley widens into the Henkrieslaagte a 30 km wide sandfilled depression between Jakkalswater 25 in the west, Koisabes 47 in the east and the Een Riet and Geselskapbank hills in the south (Gevers et al. 1937). Isolated

hogbacks representing the summits of irregularities of the drowned valley floor project above the sand flats. Southeastwards in an upstream direction Henkrieslaagte narrows somewhat and forms the sand-filled Koa Valley. The valley stretches southeastwards for about 60 km before swinging south for another 70 - 80 km to embrace the Galputs, Bitterputs and Bosluis pans and beyond. The Koa never flows along its entire length. Streams that run into the Henkrieslaagte (such as the Gari / Brak and Sabies from the south and southwest and the Beenbreekspruit further to the east) possess well-marked courses only in their upper reaches.

Lower down, they become shallow depressions in the sand, indistinct, even obliterated. Sand dunes also block flow from tributary streams that at times may reach the valley bottom. Thus pans such as Marthas are formed. Below Henkries spring the rapidly dropping floor of the Henkries valley is terraced. Four terraces are clearly distinguishable (see Mabbutt 1951 and Enslin 1963). The valley drops about 170 m over the distance of 7.5 km to the Orange River. In the terrace faces layers of sandy limestone are exposed. At the request of the then Department of Coloured Affairs which was interested in expanding the production of dates at Henkries spring, Enslin (1963) undertook a reconnaissance investigation. He determined collar and water level elevations of boreholes in the catchment above Henkries and concluded that Henkries spring owes its existence to groundwater percolating down the sand-drowned riverbeds of the Koa and tributaries. Henkries spring and seepages rise from the upper terrace in the Henkries valley. About 12 km upstream of the spring the sand fill is up to 130 m thick and the water level depth about 60 m. The spring owes its origin to constriction of the flow field and to thinning of the sand fill in the downstream direction. In April 1963 the flow used for irrigating the date plantation was gauged at 1.4 ls-1. Terrace faces lower down the valley also coincide with constrictions in the aquifer and are thus also zones of effluent seepage. Seepage from the third terrace from the top amounted to 3.25 ls-1 in 1963 (1176 mSm-1 or 8000 mg l⁻¹). The seepage waters become increasingly saline downstream owing to repeated infiltration, emergence and evaporation. Rainfall averages about 90 mm per annum over most of the spring's catchment except for the mountainous southwest where mean annual rainfall is about 150 mm.

Enslin concluded that groundwater in the Koa valley is replenished by:

Lateral inflow of groundwater from adjoining higher-lying rock-exposed ground where rainfall would not be completely absorbed by a sand cover and be lost through evaporation. § Infiltration of flood water in the sandy beds of tributary streams. Based on flow measurements and the increase in salinity down Henkries valley, Enslin thought that the total subterranean flow above Henkries may be more than 12 ls-1. This statement should not be taken seriously as boreholes above the spring yield water that is also more saline than the spring. To determine the development potential Enslin recommended that a borehole survey, geoelectrical depth probing, exploratory drilling and test-pumping be undertaken. These recommendations were however never put into effect. In 2001/2 the Department of Water Affairs and Forestry drilled 13 exploratory boreholes along lines respectively 2750 and 2400 m long and about 3 and 12 km upstream of the spring (see Figure 8 at the back of the report). The drilling was preceded by gravity observations. The two lines are oriented more or less perpendicular to the direction of groundwater flow. Data supplied by the Geohydrology Office Upington are summarized in Table 14. Note the large variation in elevation of bedrock of 61 m (or 67? m) on line 1 and 127 m on line 2 (see also Figures 9 and 10) The mean drop in water level between line 2 and 1 is about 19.2 m whilst the lowest bedrock elevations on the two lines differ by 32 m. The water level in borehole No 83034 at the spring 3 km down from line 1, stood at approx. 371 m.a.m.s.l. (April 1963) - about 30 m lower than Line 1. Bedrock on the other hand lies at approximately 351 m in borehole 83034 i.e. 33 m higher than the lowest bedrock level on line 1. It thus appears that east of borehole 83034 bedrock should drop sharply to well below 300 m. A narrow ravine must exist below the terraced infill of the Henkries River valley. Lateral inflow of groundwater from adjoining higher-lying rock-exposed ground where rainfall would not be completely absorbed by a sand cover and be lost through evaporation.

γ Infiltration of flood water in the sandy beds of tributary streams.

Based on flow measurements and the increase in salinity down Henkries valley, Enslin thought that the total subterranean flow above Henkries may be more than 12 ls-1. This statement should not be taken seriously as boreholes above the spring yield water that is also more saline than the spring (see Table 2).

This section taken from HYDROGEOLOGY OF GROUNDWATER REGION 26: BUSHMANLAND Prepared for the Water Research Commission by J R VEGTER Hydrogeological Consultant WRC Report No TT 285/06 November 2006

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TABLE 2 EXPLORATORY BOREHOLES HENKRIES- WOLFTOON AREA

Line	Bh. No	Longitude	Latitude	Surface Elevation (m)	Depth (m)	Bedrock depth (m) (elevation) (m.a.m.s.l.)	Water level (elevation) (m.a.m.s.l.)	Yield ls^{-1}	EC mSm^{-1}
1	G47232	18.1047222	28.9825	419.42	102	101 (318)	18.8 (400.6)	20	285-347
	G47233	18.1102778	28.9811111	420.38	43	42 (378)	-	>12.1	450-379
	G47234	18.1163889	28.9797223	420.86	84	81(341)	16.81(404.1)	>12	430
	G47235	18.1233334	28.9783334	420.58	48	42 (379)	-	4.21	628
	G47242	18.0988889	28.9827778	429.97	90	89 (341)	28.8(401.2)	5	150
	G47243	18.0994444	28.9825	429.97	89	89 (341)	25.6(404.4)	-	-
	G47244	18.1258334	28.9786111	420.58	36	367 (385)	25.2(395.4)	-	-
2	G47236	18.1805556	29.0330556	495.952	24	18 (477)	-	-	-
	G47237	18.1796445	29.0355555	483.579	114	113 (371)	61.2 (422.4)	5.5	115-450
	G47238	18.1763889	29.0358333	479.674	136	130 (350)	59.3 (420.4)	5.5	220-470
	G47239	18.1661111	29.0422222	478.892	113	112 (366)	-	5.5	130-150
	G47241	18.1663888	29.0419444	479.7	-	-	-	-	-
	G47240	18.1597222	29.0438889	477.250	96	92 (385)	58.2 (419.1)	2.55	150

The Cainozoic deposits encountered in the 13 Water Affairs boreholes consist of a variety of sands with some intercalated layers of clay and in one borehole of silt. The different layers of sand are described as coarse, medium fine, gravelly, clayey, and calcareous; in some cases with boulders, or gravel, or pebbles, or clay. Colours of the sands vary from white, grey, grey-brown, brown, yellow, red-brown to red. The clays are in some instances sandy or sandy and gravelly or with boulders. Clay colours vary from grey, grey-brown, grey-green, green, yellow-green, yellow, yellow-brown, brown to red. The electrical conductivity of water struck in the boreholes varies from 130 to 628 mSm^{-1} .

Borehole SK94/118 was drilled for the Department of Housing, Local Government and Planning of the Provincial Administration of the Northern Cape (Toens *et al* 1995). Its position is 29.0508° S and 18.1376° E i.e. about 2.5 km southeast or upstream from the line of boreholes No's G 47236 to G47241; its collar elevation is 487 m.a.m.s.l. Red-brown alluvial and aeolian sand was encountered to a depth of 70 m (419 m.a.m.s.l.). The hole was drilled to a depth of 119 m in fault breccia. Water was struck at 68 m below surface and tested at 5 ls^{-1} ; EC 680 mSm^{-1} (Toens *et al* 1995).

Figure 10

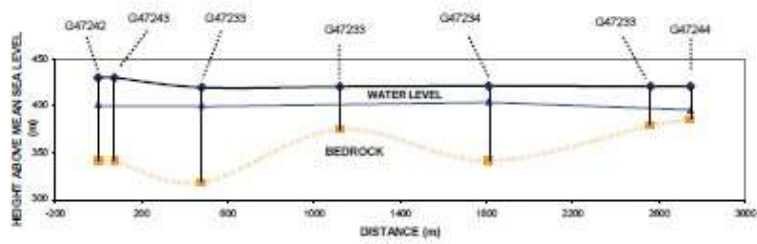
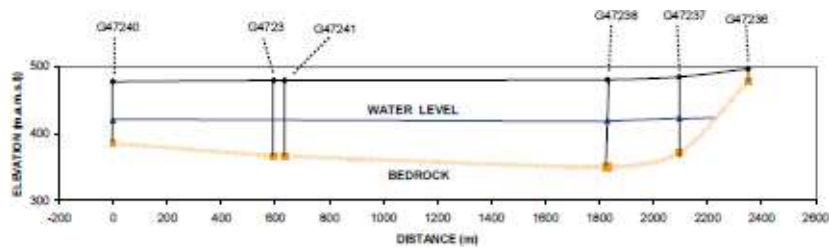


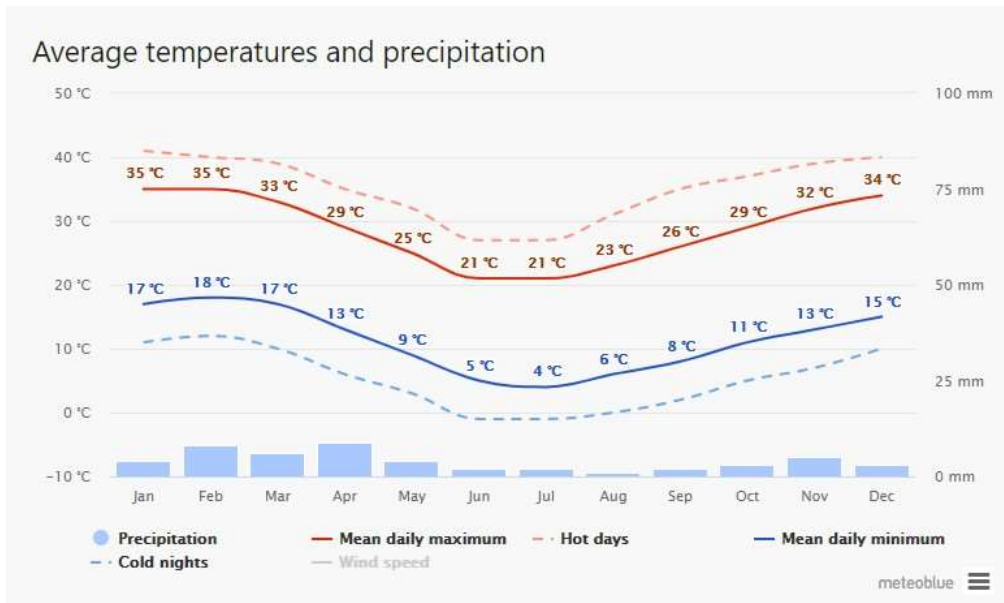
Figure 11



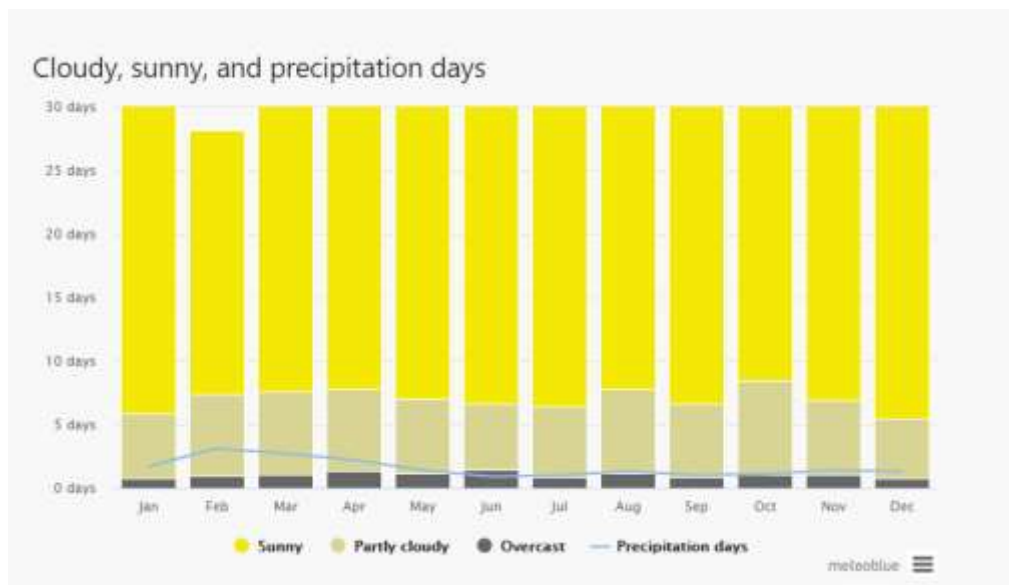
Climate

Major rainfall peak between February and April and a minor peak in November. MAP ranges from about 70–110 mm.

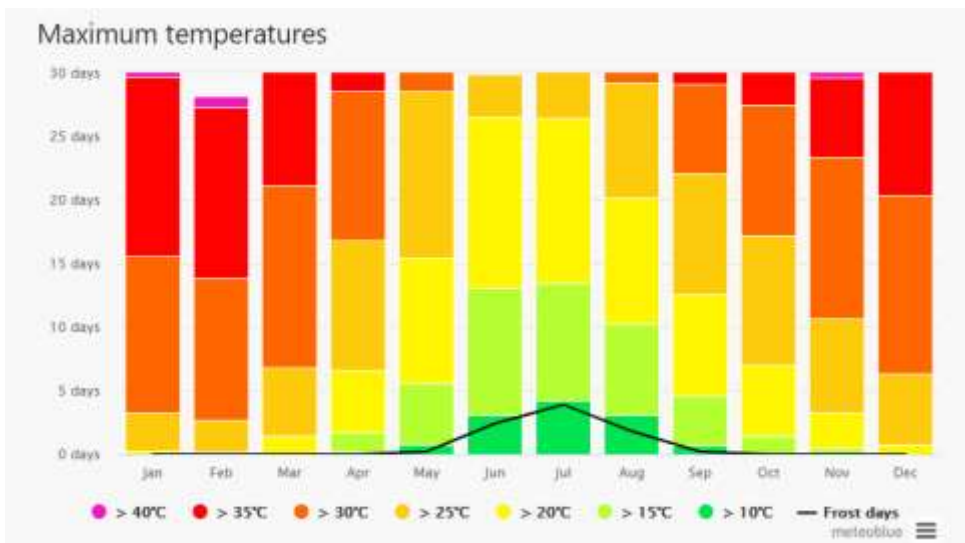
Goodhouse Climate -Source Metoblue



The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Goodhouse se Poort. 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.



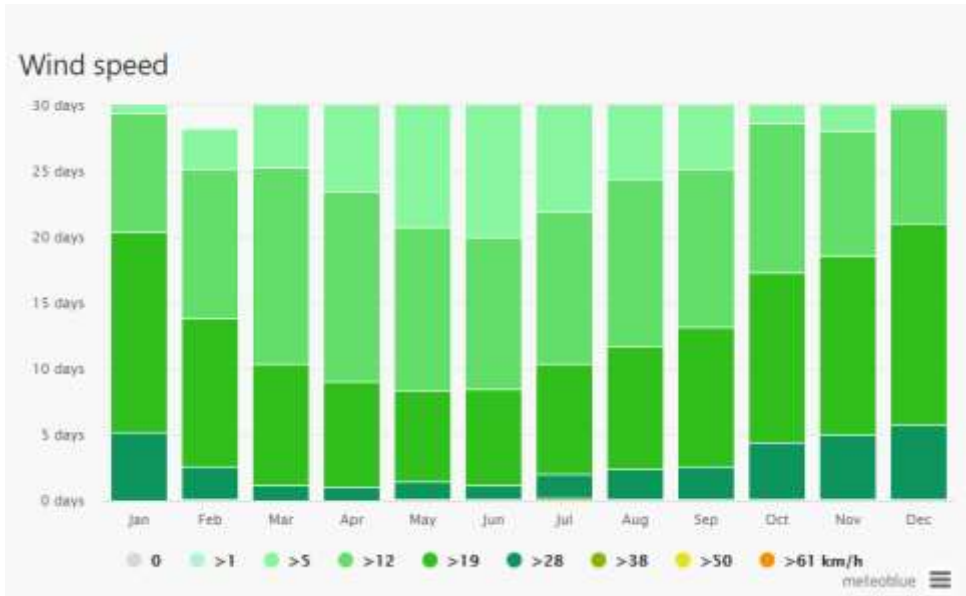
The graph shows the monthly number of sunny, partly cloudy, overcast and precipitation days. Days with less than 20% cloud cover are considered as sunny, with 20-80% cloud cover as partly cloudy and with more than 80% as overcast.



The maximum temperature diagram for Goodhouse se Poort displays how many days per month reach certain temperature.



The precipitation diagram for Goodhouse se Poort 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 Goodhouse se Poort shows the days per month, during which the wind reaches a certain speed.

Study area heritage

This section taken from the field based HIA for the prospecting development on the farms Ramons Drift 24 and Homs 25 by Pulafel 4D Consulting. Figure numbering is as per Heritage Impact Assessment.

THE FINDS

Stone tools

This study observed deficit of significant archaeological sites particularly those that are still well preserved and undisturbed in their primary contexts. However, isolated scatters of Stone Age material culture of **LOW** significance were observed which were highly weathered with probably secondary context. Some of the Stone Age material culture recorded include stone tool scrapers, cores, and arrowheads. Late Stone Age microliths were also observed at one site. Historical structures that include old pump bouse, old buildings and rectangular structure with cement floors was recorded. These, however, are of LOW significance, and mining or prospecting activities can avoid areas where these structures are sited. It is recommended that development goes ahead. The notable observations made are tabulated below.

Table 4: plotted observations made.

	Latitude (S)	Longitude (E)	Comment	Significance
1	28° 54'02.4"	18° 14'11.5"	1930s/1940s old building (Figure 17)	HIGH
2	28° 54'04.0"	18° 14'18.8"	Cemetery (Figure 28)	HIGH
3	28° 54'00.9"	18° 14'17.6"	Farm	LOW
4	28° 53'59.7"	18° 14'11.2"	Historical Military bunker (Figure 17)	HIGH
5	28° 54'47.6"	18° 15'04.1"	MSA quartz flake (Figure 29)	LOW
6	28° 56'48.9"	18° 17'24.2"	Rock outcrop	LOW
7	28° 57'58.4"	18° 18'58.54"	Lithic scatter (Figure 30)	LOW
8	29° 00'58.8"	18° 19'22.9"	Lithic scatter (Figure 31)	LOW
9	29° 00'59.2"	18° 20'00.0"	Lithic scatter (Figure 32)	LOW
10	28° 59'57.4"	18° 20'26.1"	Historical foundation (Figure 21)	LOW



Figure 27: Google Earth image of Tabulated Observations

Figure 28: Cemetery (observation 2)





Figure 29: MSA quartz Flake (observation 5)



Figure 30: Lithic scatter (observation 7)



Figure 31: Stone Age lithic materials showing arrowheads (observation 8)



Figure 32: Concentration of Stone Age lithic tools (observation 9)

SITE SIGNIFICANCE

GRADING

The significance rating for the historical buildings is HIGH, however, they are not going to be directly affected by the project development. Due to This no mitigation is required.

RECOMMENDATIONS

The stone tools discovered in the study area require no further action. The historical structures mostly occur on current homesteads and do not mean to be threatened by the prospecting activities. Therefore, based on the study presented in this assessment, the proposed prospecting is supported.

Chance findings procedures

It has already been highlighted that sub-surface materials may still be lying hidden from surface surveys. Therefore, absence (during surface survey) is not evidence of absence all together. The following monitoring and reporting procedures must be followed in the event of a chance find, in order to ensure compliance with heritage laws and policies for best practice. This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. Accordingly, all construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds.

- If during the drilling operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- The senior on-site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing SAHRA/PHRA (Natasha Higgitt).
- If a human grave/burial is encountered, the remains must be left as undisturbed as possible before the local police and SAHRA or PHRA are informed. If the burial is

deemed to be over 60 years old and no foul play is suspected, an emergency exhumation permit may be issued by SAHRA for an archaeologist to exhume the remains.

CONCLUSIONS

Pulafel 4D Consulting Pty Ltd was commissioned to undertake a field-based Heritage Impact assessment on Farm Ramons Drift 24 and Homs 25 in the Namakwa District in Northern Cape Province (NC 30/5/1/1/2/12835 PR). No significant cultural material was found on the development footprint, except for historical structures that lie outside the prospecting activities. Without identifiable cultural material, there is therefore, no heritage grounds to halt the prospecting activities. Chance findings are still possible and reporting procedures have been outlined to the developer.

SOCIO-ECONOMIC PROFILE

Map



Map: Nama Khoi Local Municipal Map

SOCIO ECONOMIC PROFILE OF NAMA KHOI MUNICIPALITY

Geography by Population group for Person weighted						
	Black African	Coloured	Indian or Asian	White	Other	Grand Total
Kotzehoop SH	33	321	-	72	39	465
Nama Khoi NU	81	2373	12	426	15	2907
Vioolsdrft SP	111	450	3	27	12	603
Goodhouse SP	-	168	-	-	-	168
Steinkopf SP	258	7485	18	33	48	7842
Bulletrap SP	-	417	-	-	-	417
Concordia SP	9	1737	12	9	9	1776
Bruinhoek	3	708	3	-	-	714
Wheal Julia	36	2433	15	3	9	2496
Kleinzee Mine SP	-	3	-	-	-	3
Kleinzee SP	132	444	9	132	12	729
Nababeep SP	210	4902	24	228	9	5373
Okiep SP	240	5913	15	69	63	6300
Bersig	378	7602	45	21	39	8085
Springbok SP	129	576	21	1857	45	2628
Matjieskloof	24	2043	3	3	9	2082
Carolusberg SP	228	726	12	189	12	1167
Phillipstown	12	150	3	-	3	168
Komaggas SP	75	2979	27	15	21	3117
NC062: Nama Khoi	1959	41424	219	3084	354	47040
Grand Total	3918	82854	441	6168	699	94080

Geography by Age in completed years for Person weighted					
	0 - 18	19 - 35	36 - 59	60 - 105	Grand Total
Kotzehoop SH	0	0	0	0	0
Nama Khoi NU	1	1	1	0	3
Vioolsdrft SP	0	0	0	0	1
Goodhouse SP	0	0	0	0	0
Steinkopf SP	3	2	2	1	8
Bulletrap SP	0	0	0	0	0
Concordia SP	1	0	1	0	2
Bruinhoek	0	0	0	0	1
Wheal Julia	1	1	1	0	3
Kleinzee Mine SP	-	0	-	-	0
Kleinzee SP	0	0	0	0	1
Nababeep SP	2	1	2	1	6
Okiep SP	2	2	2	1	7
Bersig	3	2	2	1	9
Springbok SP	1	1	1	0	3
Matjieskloof	1	1	1	0	2
Carolusberg SP	0	0	0	0	1

Geography by Tenure status for Household weighted					
	Rented	Owned but not yet paid off	Occupied rent-free	Owned and fully paid off	Other
Kotzehoop SH	6	3	9	159	3
Nama Khoi NU	111	30	396	594	51
Vioolsdrft SP	30	-	21	117	72
Goodhouse SP	-	-	33	33	-
Steinkopf SP	132	27	87	1653	39
Bulletrap SP	9	-	6	102	3
Concordia SP	39	3	6	318	135
Bruinhoek	15	3	15	165	3
Wheal Julia	60	108	48	501	6
Kleinzee Mine SP	-	-	3	-	-
Kleinzee SP	213	-	84	3	3
Nababeep SP	135	63	87	1053	21
Okiep SP	234	15	189	1221	51
Bersig	357	117	75	1401	9
Springbok SP	393	183	36	285	27
Matjieskloof	36	9	27	438	6
Carolusberg SP	48	21	57	225	9
Phillipstown	12	-	3	27	-
Komaggas SP	81	3	87	675	6

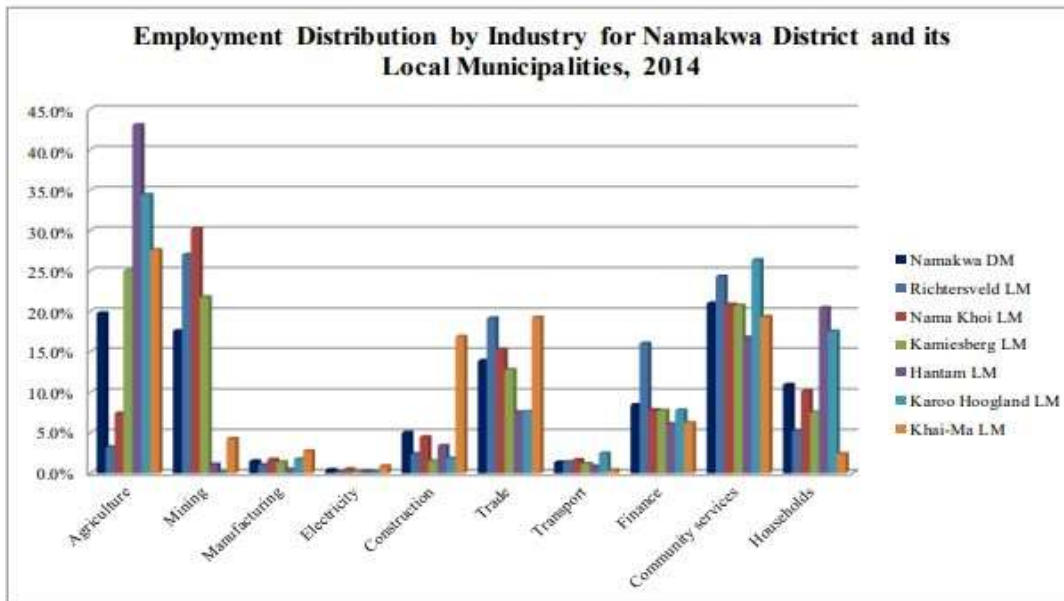
Geography by Energy or fuel for lighting for Household weighted						
	Electricity	Gas	Paraffin	Candles (not a valid option)	Solar	None
Kotzehoop SH	126	-	27	27	3	3
Nama Khoi NU	723	9	18	354	72	3
Vioolsdrft SP	234	-	-	9	3	-
Goodhouse SP	66	-	-	6	-	-
Steinkopf SP	1920	-	3	12	-	3
Bulletrap SP	117	-	-	-	-	-
Concordia SP	498	-	-	-	3	3
Bruinhoek	201	-	-	-	-	-
Wheal Julia	714	-	-	6	-	-
Kleinzee Mine SP	-	-	-	-	-	-
Kleinzee SP	300	-	-	-	-	-
Nababeep SP	1332	-	-	21	3	6
Okiep SP	1626	-	3	69	3	15

Geography by Refuse disposal for Household weighted						
	Removed by local authority/private company at least once a week	Removed by local authority/private company less often	Communal refuse dump	Own refuse dump	No rubbish disposal	Other
Kotzehoop SH	102	-	-	60	21	-
Nama Khoi NU	261	27	6	726	153	12
Vioolsdrft SP	204	-	3	30	3	3
Goodhouse SP	-	-	3	27	39	-
Steinkopf SP	1923	-	-	3	6	3
Bulletrap SP	117	-	-	-	-	-
Concordia SP	498	-	-	-	3	3
Bruinhoek	201	-	-	-	3	-
Wheal Julia	714	-	-	6	-	-
Kleinzee Mine SP	-	-	-	-	-	-
Kleinzee SP	297	3	-	-	-	-
Nababeep SP	1326	-	-	3	27	9
Okiep SP	1704	-	3	3	3	3
Bersig	1950	3	-	-	9	3
Springbok SP	918	-	-	-	3	3
Matjieskloof	513	-	-	-	3	-
Carolusberg SP	276	-	3	72	-	6
Phillipstown	45	-	-	-	-	-
Komaggas SP	747	6	-	69	18	9
NC062: Nama Khoi	11796	42	12	1005	288	51


Geography by Toilet facilities for Household weighted								
	None	Flush toilet (connected to sewerage system)	Flush toilet (with septic tank)	Chemical toilet	Pit toilet with ventilation (VIP)	Pit toilet without ventilation	Bucket toilet	Other
Kotzehoop SH	48	9	33	-	81	3	-	3
Nama Khoi NU	276	423	90	24	78	195	57	39
Vioolsdrft SP	21	111	6	-	93	12	-	-
Goodhouse SP	12	27	-	-	27	3	-	-
Steinkopf SP	24	1497	183	3	171	45	12	3
Bulletrap SP	-	69	-	-	-	48	-	-
Concordia SP	3	177	153	45	126	-	-	-
Bruinhoek	3	114	48	-	21	18	-	-
Wheal Julia	3	342	159	60	84	66	3	3
Kleinzee Mine SP	3	-	-	-	-	-	-	-
Kleinzee SP	-	303	-	-	-	-	-	-
Nababeep SP	18	867	147	6	177	117	3	24
Okiep SP	57	942	282	81	177	135	18	21
Bersig	90	1662	6	-	78	102	24	6
Springbok SP	6	915	-	-	-	-	3	-
Matjieskloof	18	483	9	-	3	-	3	3
Carolusberg SP	45	267	3	-	18	9	3	12
Phillipstown	-	42	-	-	-	-	-	-
Komaggas SP	9	135	315	12	234	114	24	3
NC062: Nama Khoi	627	8376	1440	231	1374	870	156	117

Geography by Piped water for Household weighted							
	Piped (tap) water inside dwelling/institution	Piped (tap) water inside yard	Piped (tap) water on community stand: distance less than 200m from dwelling/institution	Piped (tap) water on community stand: distance between 200m and 500m from dwelling/institution	Piped (tap) water on community stand: distance between 500m and 1000m (1km) from dwelling/institution	Piped (tap) water on community stand: distance greater than 1000m (1km) from dwelling/institution	No access to piped (tap) water
Kotzehoop SH	48	81	39	-	-	6	6
Nama Khoi NU	450	432	15	3	6	3	270
Vioolsdrift SP	123	117	3	-	-	-	3
Goodhouse SP	30	30	6	-	-	-	3
Steinkopf SP	1497	423	3	-	-	3	12
Bulletrap SP	93	21	-	-	-	-	-
Concordia SP	387	114	-	-	-	-	-
Bruinhoek	183	21	-	-	-	-	-

Employment by Industry





Show map of Northern Cape
 Show map of South Africa
 Show all
 Coordinates:  28.9°S 18.25°E

Country	South Africa
Province	Northern Cape
District	Namakwa
Municipality	Nama Khoi
Area^[1]	
• Total	0.30 km ² (0.12 sq mi)
Population (2011)^[1]	
• Total	171
• Density	570/km ² (1,500/sq mi)
Racial makeup (2011)^[1]	
• Black African	0.6%
• Coloured	98.8%
• Other	0.6%

Municipalities and communities of Namakwa District Municipality, Northern Cape		[hide]
	District seat: Springbok	
Hantam	Brandvlei · Calvinia · Loeriesfontein · Nieuwoudtville	
Kamiesberg	Garies · Hondaklip Bay · Kamieskroon · Karkams · Koringnaas · Leliesfontein · Soebatsfontein · Spoegrivier	
Karoo Hoogland	Fraserburg · Sutherland · Williston	
Khâi-Ma	Aggeneys · Onseepkans · Pella · Pofadder	
Nama Khoi	Buffelsrivier · Concordia · Goodhouse · Grootmis · Hankies · Kleinsee · Komaggas · Nababeep · Okiep · Springbok · Steinkopf · Vloosdrif	
Richtersveld	Alexander Bay · Eksteenfontein · Kuboes · Lekkersing · Port Nolloth · Sandrif	

Categories: Northern Cape geography stubs | Populated places in the Nama Khoi Local Municipality

ENVIRONMENTAL ATTRIBUTES CONSIDERED WITH THE ALTERNATIVES

ROADS

Predominantly, considerations were given to the placement of infrastructure on the study area in relation to the target prospecting areas. No consideration was given to the development of on-site roads as the study area is relatively flat and sandy with scarce vegetation and current users drive randomly across the area and a few informal roads are developed.

For the prospecting activities, only those tracks must be used which will allow full access to the target areas.

Access to the hills for sampling of the pegmatites must be done on foot as it is not accessible by any vehicles means.

Current roads should be used as far as possible.

Any alternative will require that additional fauna and flora be destroyed. It will also impact greater on the surface water drainage pattern.

The development of the diamond trenches should be strategically placed to have the minimum disruption to current land use and destruction to environment with regards to the natural vegetation, removal of topsoil, placement of stockpiles, dust and noise pollution on the surrounding area and the sterilisation of the mineral resource.

The infrastructure erected for the prospecting activity should have minimal impact to the natural water flow to minimise pollution and erosion.

TECHNOLOGY

Diamonds

No alternative to the rotary pan plant arrangement was considered due to the cost of any other technology (DMS Plant) for the period of use.

Pegmatites

The applicant gave consideration to the employment of a back-actor but the impact on the environment would be far greater and not guarantee the results for sampling. Contamination of the sample would take place.

a. Description of the current land uses.

The study area is currently used for small scale-livestock farming.

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

Environmental and current land use map.

(Show all environmental and current land use features)



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

(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, completed under vi below.

Potential Impacts	Nature	Reversible
Land use conflicts	Negative	Yes
Legal Contraventions –Operating outside authorised scope	Negative	Yes
Topography	No Impact	Yes
Soil compaction, erosion and pollution	No Impact	Yes
Loss of vegetation	Negative	Yes
Invasion of alien plant	Negative	Yes
Water pollution and over extraction	No Impact	Yes
Dust generation from prospecting activities	Negative	Yes
Noise pollution emanating from heavy vehicles and operating machinery	Negative	Yes
Visual impacts	No Impact	Yes
Destruction of heritage resources	Negative	No
Health and Safety of Employees	Negative	No
Socio-economic conflicts with influx from other labour sending areas	Negative	Yes
Job creation	Positive	–

vi) 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).

The potential environmental impacts associated with the project will be evaluated according to its nature, extent, duration, intensity, probability and significance of the impacts, whereby:

Nature: A brief written statement of the environmental aspect being impacted upon by a particular action or activity.

Extent: The area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact. For example, high at a local scale, but low at a regional scale;

Duration (D): Indicates what the lifetime of the impact will be;

Intensity (I): Describes whether an impact is destructive or benign;

Probability (P): Describes the likelihood of an impact actually occurring;

Impact Reversal (R): The probability and the degree of reversing the activity impact;

Irreplaceable Loss (L): Loss of resources that cannot be replaced; and

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.

The significance of each risk/impact will be identified as follows:

Table 7: Criteria Used for Rating of Impacts

	National (4)	Regional (3)	Local (2)	Site (1)
Extent	The whole of South Africa Permanent (4)	Provincial and Parts of neighbouring provinces Long Term (3)	Within a radius of 2 km of the construction site	Within the construction site
Duration	Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	The impact will continue or last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non- transitory	The impact will last for the period of the construction phase, where after it will be entirely negated	The impact will either disappear with mitigation or will be mitigated through natural process in a spanshorter than the construction phase
Intensity	Very High (4) Natural, cultural and social functions and processes are altered to extent that they permanently cease	High (3) Natural, cultural and social functions and processes are altered to extent that they temporarily cease	Moderate (2) Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way	Low (1) Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected
Probability of Occurrence	Definite (4) Impact will certainly occur	Highly Probable (3) Most likely that the impact will occur	Possible (2) The impact may occur	Improbable (1) Likelihood of the impact materialising is very low
Impact Reversal	Highly Impossible (4)	Moderate (3) Impact can be revered to some extent with loss of natural resources	Possible (2) High possibility of impact reversal	Definite (1) Impact can be totally reversed
Impact Reversal-Irreplaceable Loss	Definite (4) Resources definitely be lost	Highly Probable (3) Most likely that resources will be lost	Possible (2) Resources may be lost	Impossible (1) Loss of resources highly unlikely

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

Table 8: Criteria for Rating of Classified Impacts

Negligible (5-10 points)	A negligible impact that can be easily managed and avoided.
Low Impact / Minor (11-20 points)	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure
Medium Impact (21-30 points)	Mitigation is possible with additional design and construction inputs.
High Impact (31-50 points)	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment
Very High Impact/Major +50	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and /or operational phases.

Status	Denotes the perceived effect of the impact on the affected area.
Positive (+)	Beneficial impact.
Negative (-)	Deleterious or adverse impact.

The suitability and feasibility of all proposed mitigation measures is included in the assessment of significant impacts. This was achieved through the comparison of the significance of the impact before and after the proposed mitigation measure is implemented.

Calculation of significance:

$$(Extent+Duration+Intensity+Impact Reversibility+Irreplaceable Loss of Resources) \times \text{Probability of occurrence} = \text{Significance}$$

E = Extent, D = Duration, I = Intensity, R = Impact Reversibility, L = Irreplaceable Loss of Resources, P = Probability of occurrence								Where (E + D + I + R + L) X P = Significance			
Potential Impact	Phase	Impact Description	Rating Before Mitigation						Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
			E	D	I	R	L	P			
Legal requirements											
Over border prospecting as no farm fences exists	Operational.	Environmental Impact to neighbouring farms.	2	2	4	4	4	4	64	Beacons be placed	10
Delayed and/or disruption prospecting operations	Site Establishment & Operational.	Disregarding for the conditions of the Environmental Authorisation. Breach of MHSa act, the regulations promulgated thereunder and mandatory code of practices. Disregard for the surface use agreement and conditions. No compliance or partial compliance to the approved EMPr.	2	3	4	4	4	4	68	Copies of all authorisations, permits, licences and permissions to be kept on site and accessible to all employees. The employee induction should be inclusive of all conditions pertaining to the site activities. Legal appointees must enforce compliance to the legal requirements. Continuous monitoring of compliance by management and supervisors. Audits internally and externally	10
Legal liabilities and incompetency	Site Establishment & Operational	Breach on the conditions of the surface use agreement resulting in loss to the landowner and subsequent litigation sought. Legal penalties for failing to comply with site operational permissions, licenses, authorisations and permits. Appointment of not suitably qualified and competent personnel.	1	2	2	3	3	3	33	Appointment of competent and experienced legal appointees. All permissions, permits, authorisations, licenses must be fully reviewed before work undertaken to ensure compliance with the scope of work. Adequate resources be made available to ensure the operation can be compliant with all legislative conditions. As required by the MHSa a complaint register must be kept allowing for the recording all complaints and prompt rectification thereof. Develop and Implement mandatory COP's, SOP's, company Policies and Standards	18

											Internal and External Audits	
Geology												
Mining Resources Sterilisation	Planning and Construction	No mine plan or poorly designed mine plan. Improper execution of mine plan.	1	2	2	1	4	3	30	Proper Mine Design Practice Monitoring of operation to be according to mine plan. Infrastructure placement: laydown areas, stockpiles, waste dump, dams.	2	
Soil												
Leakages and spillage of hazardous chemicals from machinery and equipment, poor housekeeping and storage areas.	Site Establishment, Construction, Operational and Closure.	Leakages of hydrocarbons from site vehicles and operating equipment. Leakages and spillage of hazardous chemicals from storage areas.	1	1	1	1	1	2	8	All site vehicles and equipment must be properly maintained, and daily pre-use inspection conducted for each machine and equipment. Drip trays must be placed under stationery machinery in hard park areas and where parked outside of hard park areas as in excavators.. Spill kits must be readily available, and employees trained in the use thereof. Leakages and spillages must be attended to as soon as they occur and a protocol for the treatment of contaminated soils. Contaminated soil must be placed in designated plastic bins and only disposed of at registered appropriate waste site.	6	
Soil Compaction	Site Establishment, Construction and Operational	Compaction of soil by moving machinery and equipment resulting in reduced vegetation growth capabilities.	1	2	1	1	1	4	24	Vehicle and machinery movements must be restricted to approved corridors. No new access roads must be developed without the approval of the site landowner and ECO. Created access roads no longer in use must be ripped for vegetation regrowth. Develop and Implement mandatory COP's, SOP's, Company Policies and Standards	8	

Loss and degradation of topsoil	Site Establishment, Operational & Construction	Removal of topsoil to establish mining pit areas and trenches. Dedicated stockpile areas during trenching. Loss of topsoil through erosion and contamination resulting in reduced vegetation rehabilitation potential	1	1	1	2	2	4	28	Topsoil must be stockpiled separately from any other site materials. The topsoil must be stockpiled away from the drainage lines and outside the 1:100-year floodline (Orange River) but within the approved prospecting area. Contaminated topsoil must be treated as soon as possible and where treatment is not possible, the soil must be separated and stored in contaminated materials bins. A storm water management plan developed that must include storm water diversion channels around topsoil stockpiles. Topsoil must not be used for any other activity besides rehabilitation unless there is excess.	10
Soil Erosion		Erosion of loose soils and stockpiled soils	1	2	1	1	1	3	18	Storm water diversion channels must be developed around stockpiling area. Soil disturbance must be limited to working area.	8
Biodiversity											
Loss of vegetation	Site Establishment, Operational & Construction	Clearing of vegetation for establishment of pits and trenches. Clearing of vegetation to establish stockpile areas.	1	1	1	1	1	1	5	Alien invasive plants must be mechanically controlled. No herbicides used. The identified drill areas must not be cleared all at once but progressively with prospecting activity. Seedbank for indigenous vegetation may be established to aid during site rehabilitation. No fires must be allowed on site.	No Impact

Loss of fauna		Loss of habitat when vegetation is cleared and environment invaded by prospecting activities. Restricted fauna movement and increased health and safety risks to wildlife due to deep excavations and barricades. Driving over micro and small wild animals. Wildlife hunting by the prospecting crews.	1	2	1	1	1	1	6	No hunting must be allowed on site. The site must be always kept neat to avoid attraction of scavengers Where animals are spotted within working areas they must be rescued and moved to adjacent undisturbed areas; Excavations must be barricaded to prevent animal fall-in. All excavations must be re-filled once the mining at that specific area ceases. No pets must be brought to site. Site activities must be restricted to daytime.	No Impact
Invasion by invasive alien plants	Site Establishment, Operational & Post Closure	Introduction of invasive alien plants	1	1	1	1	1	4	4	A poster of all common invasive plants for the area must be developed and employees be inducted on the subject. All invasive plants must be removed as soon as they are noticed. An invasive plant monitoring programme must be developed for both operational and post operational phases.	No Impact
Surface and Ground water											
High usage of water	Construction and Operational	Demand for water for machinery and dust suppression during prospecting activities	1	3	2	1	1	3	24	No new water boreholes must be drilled onsite to meet operational water requirements. Water must be obtained from existing sources and a usage consent must be obtained from the municipality. The water usage bylaws to be observed. Water usage must be recorded by the site Environmental officer daily. Save water as part of environmental awareness programme.	8
Surface and ground water contamination	Site establishment, Construction &	Surface water getting into contact with contaminated	1	1	1	1	2	3	18	Storm water must be diverted away from the drill areas.	8

	Post-mining	soils. Contaminated materials going down into subsurface water. Flow of storm water from contaminated areas into surface water drainages									Contaminated water must be contained. All contaminated surfaces must be cleaned as soon as they are noticed. Temporary chemical toilets must be provided by a company approved by the Engineer. These toilets must be made available for all site staff. The construction of "long drop" toilets is forbidden. Under no circumstances may open areas or the surrounding bush be used as a toilet facility. Aquifer detection methods should be applied before drilling can be undertaken. Stormwater berms around excavations to avoid flooding and keep clean and dirty water apart	
Enviro-Socioeconomic												
Job creation	Site Establishment, Construction, Operational, & Closure	Machinery and vehicle operators will be required.	2	3	1	0	0	4	24		The employees should be sourced from the local communities. Communication with local employment forums. No recruitment on site. Employment Equity	Positive
Landowner conflicts	Site Establishment, Construction, Operational & Post-Mining	Property owner reluctant to grant access into their properties. Highly degraded properties after prospecting activities cease.	1	4	2	1	3	4	44		Access control and security surveillance. Land access agreement must be reached between the applicant and the property owners. Operational times must be communicated with the property owners. All prospecting activities must be limited to approved areas. No hunting must be allowed on site. No camping areas must be established on site. Access roads establishment must be done in consultation with	10

										property owners.	
Visual alterations	Site Establishment, Operational & Construction	The presence of machineries in an open area less than a kilometer from Goodhouse town	1	1	1	1	1	1	1	All site activities must be limited to approved area. The property owners must be made aware of prospecting scheduling. All site personnel must be fully aware of property owners' access conditions.	No Impact
Noise Pollution	Site Establishment , Operational & construction	Introduction of noisy heavy machinery and vehicles on site	1	1	1	1	1	2	10	The property owners and other affected parties must be made aware of activity scheduling; Scheduled Maintenance on machine and equipment and silencers The activities must be conducted during the day i.e. from 07:00 to 18:00.	No Impact
Land Pollution	Site Establishment & Construction	General waste littering by site team	1	3	2	1	1	3	24	All site personnel will be inducted on reduce, reuse and recycle concept. Temporary chemical toilets must be provided by a company approved by the Engineer. These toilets must be made available for all site staff. The construction of "long drop" toilets is forbidden. Under no circumstances may open areas or the surrounding bush be used as a toilet facility. Waste must be separated and stored in marked bins. Waste disposal certificates must be kept on-site; A clean-up campaign must be undertaken every second Friday;	7

Compromised safety and security	Site Establishment & Construction	The site activities will result in influx of people to site creating security risks for workers and property owners'.	1	3	2	3	3	4	48	Landowners must be provided with mine schedule; No hiring must be done on site; All site personnel must have identification card; All activities must remain within the approved site.	24
Heritage Resources											
Destruction of Heritage Resources	Site Establishment, Operational & construction	Unearthing of heritage significance artefacts during trenching activities.	1	1	1	1	1	2	10	Should any paleontological or cultural artefacts be discovered work at the point of discovery must stop, the location be clearly demarcated and SAHRA contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA Environmental Awareness Program.	No Impact

Health and Safety

Health and Safety/Bodily injuries	Site Establishment, Operational	<p>Injuries arising from erratic operations or mechanical failures of site machinery and vehicles.</p> <p>Fall into excavations either by personnel or general public.</p> <p>Chipping of outcrops to obtain outcrop samples.</p> <p>Encounter with dangerous wild animals during site survey.</p>	1	3	1	2	2	3	27	<p>The site machinery must be kept in good working condition.</p> <p>All machinery operators must be competent and have driver authorisations.</p> <p>Excavations must be demarcated and marked with visible tape or lined.</p> <p>First aid kits must be made available on site and a trained Safety, Health and Environment Representatives appointed.</p> <p>The Geologists conducting field mapping should wear protective clothing.</p> <p>During prospecting activities all employees must be provided with Personal Protective Equipment.</p> <p>All site personnel must have a working cell phone to communicate in case of emergency during survey phase.</p>	-10
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vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

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

POSITIVE IMPACTS

Employment Opportunities: This operation will require the employment of yellow fleet operators and it is anticipated that 15 people would be employed during the prospecting cycle. FCL will place emphasis on the employment of women, the youth and people with disability.

SMME Support: The prospecting 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 Section that training should be provided to operators. This training should be conducted by accredited trainers and assessors. This allow operators 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 immediate businesses.

Mineral Reserve Quantification: The presence of alluvial diamond gravels and pegmatite seams on site will be verified and thereafter the economic value of the manganese will be determined which could ultimately lead to the establishment of a mine. The mine itself have significant socioeconomic value. In the event that a viable reserve is confirmed, there would be high degree of positive impacts such as employment of large number of local residents, socio-economic balance of the local community and on the National and Provincial scale mining contribute highly to the Gross Domestic Product (GDP).

Revenue Generated to the State and Local authorities: FCL will have to pay taxes and levies to the State and the Local authorities.

NEGATIVE IMPACTS

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

Land use alternative conflicts: The site is not zoned for mining/industrial activities. This will create a parallel demand for land as successful prospecting activities will result in the establishment of a mine. A thorough consultation must be undertaken with all affected parties.

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 prospecting machinery and equipment on site will attract criminals who would seek to steal and sell such equipment. Diamonds is a mineral well sought after and are prone to theft. A lucrative commodity for thieves is the steal of diesel as it is easily sellable.

Noise Generation: The site is located just over a 6 km from Goodhouse Town, the plant and the yellow fleet will create noise that might echo to the local town.

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

Disturbance to Current Landowner/Land Occupier Activities: The bulk sampling activities through trenches and pits will have a disturbance to the current farm activities. Proper planning in consultation with the owner and occupier of the land need to be conducted.

Water Use Competition: The area is known to have a limited source of water and is a scarce commodity. The dust suppression system on the mobile plant and watering down of roads will be a major consumer of water which might give rise to conflict.

Soil Contamination and disturbance to Soil structure: The trenching 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.

Destruction of Heritage resources: During the prospecting activities heritage resources might be destroyed.

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

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

Below a summative impact/risk management is provided.

Noise: Directly affected, adjacent landowners in proximity to the site must be informed of the planned activities. The bulk sampling and processing activities and movement of vehicles into the site should be carried out during the day between 7:00 a.m. to 17:00.

Influx of labour to site: Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.

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

Water: water requirement for the operation must be met through extraction from existing municipality connections ensuring that all by-laws are adhered to; The operations will be always located at least 100 meters from wetlands and streams.

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 trenches and pits must have safety berms erected to avoid accidental entry; All Health and Safety measures required by the DMRE should be enforced in the open pit and related mining areas.

Soil Impact Management: Topsoil including the remaining vegetation, will be stripped and stockpiled 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.

Noise Pollution: This must be eliminated through the engineering design of plant and equipment and the yellow machines fitted with silencer and planned maintenance performed.

Destruction of Heritage resources: To be included in the employee induction program and protocols as per heritage impact assessment conducted be communicated to all employees.

(ix) Motivation where no alternative sites were considered.

- *The proposed prospecting area is targeted as the desktop studies suggest that there is high possibility of diamonds and pegmatites.*
- *There is sufficient open area with no human settlements that could possibly create conflicts with the landowners.*
- *Although there is a network of streams, these can be avoided and prospecting undertaken on dry areas.*
- *The site is located outside any environmental sensitive areas such as protected or critical biodiversity areas.*

**ix) 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 drilling site is also influenced by the accessibility and environmental sensitivity. Thus, the drilling sites are located away from all water drainages.

- h) 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 prospecting activities the following steps will be undertaken:

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.

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 Water Affairs and Sanitation's information documents;

Municipal Integrated Development Plan; and Municipal Strategic Development Framework;

SAHRA reports and literature.

The Environmental screening tool.

Specialist reports of previous studies

Site Visit

A site visit was conducted. The site visit was to ensure that the information gathered as part of the Desktop investigation reflects the current status of the land. Small-scale miner's interviews conducted.

Impacts assessment, rating and management

The ratings of the identified impacts were undertaken in a quantitative manner as provided in 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.

IMPACT ASSESSMENT

IMPACT ASSESSMENT FOR FCL PROJECT								
Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Desktop Study								
No Impact	Planning	None	None	None	None	Protect sensitive site	Locate sensitive and protective areas such as rivers	N/A
Geophysical Surveys								
Unauthorised access into private property	Construction	1 ha	Private Property	Control through consultation with property owners	Access agreements must be signed by the landowners; and All site personnel must have identification cards.	Protection of private properties	Consult all landowners	Before and after accessing site.

IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Clearing of vegetation to establish on-mine roads to pits.	Construction	500m ²	Fauna	Control through limiting disturbance area; and Remedy through rehabilitation.	Vegetation clearing must only be cleared when required and limited to station establishment area. Vegetation must be identified using vegetation handbook. Existing roads must be used as far as practicable; and No animal species must be harmed during vegetation clearing, search and rescues must be done before clearing takes place.	Biodiversity Conservation	Should there be protected Plants, none must be removed without removal permit; and Site will be rehabilitated to restore pre-prospecting conditions.	Throughout the prospecting period
Destruction of habitats when clearing vegetation.	Construction	500m ²	Fauna	Control through search and rescue; and Limiting disturbance area.	Before vegetation is cleared in each drill station, search and rescue must be ensured that there is no fauna; Where fauna are present they must be moved to adjacent areas	Biodiversity Conservation	Search and rescue	Throughout the prospecting period

IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Use of bushes/open areas as toilets contaminate both soil and water	Construction	Over total prospecting area	Soil, water Humans	Control through provision of toilets; Control through environmental awareness training.	The applicant must ensure that site teams have chemical toilets; and The site EO must ensure that all site personnel has attended environmental awareness training.	Water sources protection; and Protecting wellbeing of water users.	Chemical toilets will be provided	Throughout Geophysical Survey Phase
Trenching								
Destruction of habitats when clearing vegetation	Construction Operational and closure	5000m ²	Fauna	Control through search and rescue; and Limiting disturbance area.	Before vegetation is cleared in each station, search and rescue must be ensured that there is no fauna; Where fauna is present they must move to undisturbed adjacent areas;	Biodiversity conservation	Search and rescue	Throughout the Prospecting Period
Clearing of vegetation to establish on-mine roads to pits.	Construction Operational and closure	500m ²	Biodiversity; Soil; Humans; and Water	Remedy through rehabilitation; Conduct site walks; Limiting disturbance areas; and	New access roads must be created in consultation with the landowners and must not disturb	Biodiversity conservation		Throughout the Prospecting Period.

				Control through implementing activity methods statement.	drainage lines; Multiple tracks must not be created to access a single point; No fires are allowed on site; and All disturbed areas must be rehabilitated as soon as they are out of use; The site must be monitored for invasion by invasive alien plants and they must be removed as soon as they are identified.			
Destruction of habitats when clearing vegetation	Construction Operational and closure	5000m ²	Fauna	Control through search and rescue; and Limiting disturbance area.	Before vegetation is cleared in each station, search and rescue must be ensured that there is no fauna; Where fauna is present they must move to undisturbed adjacent areas;	Biodiversity conservation	Search and rescue	Throughout the Prospecting Period

Disturbance contamination of aquifers' in both quality and quantity	Construction Operational and closure	Total Prospecting area and surrounding area	Water	Control through implementing activity methods statement; Control through daily inspection of site machinery.	Before drilling is undertaken, groundwater detection must be done to avoid water bearing lithologies; and Drilling holes must be capped overnight to prevent dirt and any impurities to get underground; The drilling machineries must be kept in good working condition to prevent leakages of hydrocarbons;	Protection of water sources and water quality	Presence of aquifers will be tested before drilling.	Before drilling at each drilling station
Health and safety risks arising from machinery operations and human errors.	Construction Operational and closure	Total Prospecting area	Health and safety	Control through implementation of activity-based methods statements	Each machine operator must have a certificate of competence for that specific machinery; All excavations must be clearly marked with a reflective tape and barricaded overnight.	Health and safety standards	Machinery kept in good working condition	Throughout the Prospecting Period
Generation of dust	Construction Operational and closure	Over The total prospecting area and surroundings	Air quality	Control through dust suppression	Should the activities create significant, the working areas must be watered to prevent	Air quality standards Health and safety standards	Dust suppression	During Prospecting Activities

					generation of dust			
Generation of noise as the site is located at less than 1km from the town	Construction Operational and closure	Over The total prospecting area and surroundings	Noise	Maintain through servicing on site equipment; and Consultation with affected parties.	All site machinery must be kept in good working condition; Faulty machinery must be taken off site for servicing	Noise standards	Consult affected parties	During Prospecting Activities
Mobile Processing Plant								
Destruction of habitats when clearing vegetation	Construction Operational and closure	1600m ²	Fauna	Control through search and rescue; and Limiting disturbance area.	Before vegetation is cleared in each station, search and rescue must be ensured that there is no fauna; Where fauna are present they must moved to undisturbed adjacent areas;	Biodiversity conservation	Search and rescue	Throughout the Prospecting Period
Destruction of habitats when clearing vegetation	Construction Operational and closure	1600m ²	Fauna	Control through search and rescue; and Limiting disturbance area.	Before vegetation is cleared in each station, search and rescue must be ensured that there is no fauna; Where fauna are present they must moved to undisturbed adjacent areas;	Biodiversity conservation	Search and rescue	Throughout the Prospecting Period

Health and safety risks arising from machinery operations and human errors.	Construction Operational and closure	Over The total prospecting area and surroundings	Health and safety	Control through implementation of activity-based methods statements	Each machine operator must have a certificate of competence for that specific machinery; All excavations must be clearly marked with a reflective tape and barricaded overnight.	Health and safety standards	Machinery kept in good working condition	Throughout the Prospecting Period
Generation of dust	Construction Operational and closure	Over The total prospecting area and surroundings	Air quality	Control through dust suppression	Should the activities create significant, the working areas must be watered to prevent generation of dust	Air quality standards Health and safety standards	Dust suppression	During Prospecting Activities
Generation of noise as the site is located at less than 1km from the town	Construction Operational and closure	Over The total prospecting area and surroundings	Noise	Maintain through servicing on site equipment; and Consultation with affected parties.	All site machinery must be kept in good working condition; Faulty machineries must be taken off site for servicing	Noise standards	Consult affected parties	During Prospecting Activities
Clearing of vegetation to establish on-mine roads.	Construction Operational and closure	500m ²	Biodiversity; Soil; Humans; and Water	Remedy through rehabilitation; Conduct site walks; Limiting disturbance areas; and Control through implementing	Site walk must be done before vegetation clearing is undertaken and should there be protected species, they must be marked	Biodiversity conservation		Throughout the Prospecting Period.

				activity methods statement.	and must not be removed without permit; Clearing of vegetation must be limited to drill areas only; New access roads must be created in consultation with the landowners and must not disturb drainage lines; Multiple tracks must not be created to access a single point; No fires are allowed onsite; and All disturbed areas must be rehabilitated as soon as they are out of use; The site must be monitored for invasion by invasive alien plants, and they must be removed as soon as they are identified.			
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IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Destruction of habitats when clearing vegetation	Construction Operational and closure	1 ha	Fauna	Control through search and rescue; and Limiting disturbance area.	Before vegetation is cleared in each station, search and rescue must be ensured that there is no fauna; Where fauna are present they must be moved to undisturbed adjacent areas;	Biodiversity conservation	Search and rescue	Throughout the Prospecting Period
Contamination and erosion of topsoil and stockpiles before, during removal and stockpiling	Construction Operational and closure	2000m ²	Soil	Control through storm water diversion beams; Control through implementing activity methods statement.	Contamination of soil from any leaks, spillages of hydrocarbons and any other standard hazardous substances must be cleaned as soon as they occur; Topsoil stockpiles must be located away from any chemical substance storage; Site vehicles, machinery and equipment must always be in good working conditions and daily inspections be conducted before they are used and a	Rehabilitation	Topsoil will be preserved and protected from contamination and erosion for later use during rehabilitation	Throughout the Prospecting Period

					checklist be kept onsite. No vehicles and equipment maintenance must be done on site and faulty equipment must be taken off site. Topsoil stockpiles must be located away from drainage lines to prevent erosion.			
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IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Excavations (Pits)								
Disturbance of local sewage and water pipes connections	Construction	Unknown if present- Previous Paprika project site	Services supply	Control through consultation with local municipality; Control through implementing activity methods statement.	Obtain a layout plan for local connections to determine if there are any in the proposed site; and Should any pipe damage occur, the relevant authority must be notified immediately.	Preservation of private properties	Local connections layout plan will be reviewed to determine possible area for drilling	Throughout the Prospecting Period

IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Disturbance contamination of aquifers' in both quality and quantity when	Construction Operational and closure	Total prospecting area	Water	Control through implementing activity methods statement; Control through daily inspection of site machinery.	Before trenching is undertaken, groundwater detection must be done to avoid water bearing lithologies; and Machineries must be kept in good working condition to prevent leakages of hydrocarbons;	Protection of water sources and water quality	Presence of aquifers will be tested before drilling.	Before drilling at each drilling station
	Construction	Over The total prospecting area and surroundings	Heritage Artefacts	Conduct site walks	The site walk conducted during EIA and the history of land uses ruled out the possibility of heritage artefacts on site; However, should any heritage significance artefacts be unearthed work at that area must be stopped immediately and the Police as well as SAHRAS be notified immediately.	Preservation of heritage sites and objects	Site assessment was done.	The site team must remain alert throughout the Prospecting Period.

Generation of dust	Construction Operational and closure	Over The total prospecting area and surroundings	Air quality	Control through dust suppression	Should the activities create significant, the working areas must be watered to prevent generation of dust	Air quality standards Health and safety standards	Dust suppression	During Prospecting Activities
Generation of noise as the site is located at less than 1km from the town	Construction Operational and closure	Over The total prospecting area and surroundings	Noise	Maintain through servicing on site equipment; and Consultation with affected parties.	All site machinery must be kept in good working condition; Faulty machineries must be taken off site for servicing	Noise standards	Consult affected parties	During Prospecting Activities

IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Waste	Construction	Total prospecting area	Water Soil	Control through environmental awareness training Control through implementing activity methods statement Control through daily inspection of site machinery and equipment.	Littering must be controlled on site; Soil contamination from hazardous substances must be attended to as soon as they occur All major water contamination must be reported to the Department of Water Affairs; Site vehicles, machinery and equipment must always be in good working condition and daily inspections be conducted before they are used and a checklist be kept on site; No vehicles and equipment maintenance must be conducted on site and faulty equipment must be taken off site.	Protection of water sources and water quality	Contaminations will be prevented and when they occur, they will be reported to DWS; Daily inspections will be conducted	Throughout the Prospecting Period

IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Health and safety risks arising from machinery operations and human errors.	Construction Operational and closure	Over The total prospecting area and surroundings	Health and safety	Control through implementation of activity-based methods statements	Each machine operator must have a certificate of competence for that specific machinery; All excavations must be clearly marked with a reflective tape and barricaded overnight.	Health and safety standards	Machinery kept in good working condition	Throughout the Prospecting Period

Site Rehabilitation

IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Soil erosion	Post closure	Over The total prospecting area and surroundings	Soil Water Biodiversity	Control through storm water control beams.	Where necessary storm water control beams must be used to control erosion along rehabilitated access roads; Rehabilitation materials including topsoil must be free of contaminants such as hydrocarbons; Topsoil must not be	Erosion prevention	Control erosion	During and after Prospecting Period

					compacted but care should be given to prevent erosion.			
Invasion by invasive alien plants	Post closure	Over The total prospecting area and surroundings	Biodiversity	Control through monitoring and removal.	Invasive alien plants must be monitored during and after prospecting activities; All invasive plants must be removed once identified and a follow-up be developed.	Preserving biodiversity	Invasive species will be monitored and cleared.	During and after Prospecting Period
Other Impacts								
Failing to meet local community expectations especially job creation	Construction		Social	Control through consultation.	Consultations must be done with local leaders and the number of people employed and how they will be employed be communicated. No unauthorised personnel must be allowed into prospecting site	Engage local community	Community will be engaged through its elected leaders	Before undertaking Prospecting Activities

IMPACT ASSESSMENT FOR FCL PROJECT

Potential impact	Phase	Disturbance Scale	Aspects Affected	Mitigation Type	Mitigation Measures	Standard to be Achieved	Compliance with Standards	Time Period for Implementation
Property theft for both the landowners/users and applicant	Planning and construction	Total site	Social and security	Implement a working security system to control access and personnel identification	All authorised personnel must have identification card. No unauthorised personnel must be allowed on site.	Safety and security	Ensure safety of site personnel	During Prospective Activities
Destruction of Heritage Resources	Construction an operational	Total site	Heritage	Chance finds protocol	Employee induction	Identificatio n of site heritage resources	NHRA Section 34, 35, 36, 37,38	Start of prospecting activities

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 applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Heritage Impact Assessment for the proposed prospecting of Farms Ramons Drift 24 and Homs 25	<p>The stone tools discovered in the study area require no further action. The historical structures mostly occur on current homesteads and do not mean to be threatened by the prospecting activities. Therefore, based on the study presented in this assessment, the proposed prospecting is supported.</p> <p>Chance findings procedures</p> <p>It has already been highlighted that sub-surface materials may still be lying hidden from surface surveys. Therefore, absence (during surface survey) is not evidence of absence all together. The following monitoring and reporting procedures must be followed in the event of a chance find, in order to ensure compliance with heritage laws and policies for best practice. This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. Accordingly, all construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds.</p> <ul style="list-style-type: none"> • If during the drilling operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any 	X	Throughout the document referring to Heritage Resources headings. Page 64, 67,

	<p>artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</p> <ul style="list-style-type: none">• The senior on-site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing SAHRA/PHRA (Natasha Higgitt). <p>If a human grave/burial is encountered, the remains must be left as undisturbed as possible before the local police and SAHRA or PHRA are informed. If the burial is deemed to be over 60 years old and no foul play is suspected, an emergency exhumation permit may be issued by SAHRA for an archaeologist to exhume the remains.</p>		
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j) Environmental impact statement

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

The study area falls within the Desert Biome, Eastern Gariep Plains Dessert, and considered to be one of the most biologically diverse and environmentally sensitive deserts in the world.

Three faunal species are considered **Vulnerable**, namely the Hartmann's zebra (*Equus zebra* subsp. *hartmannae*), the Black-footed cat (*Felis nigripes*) and the Cape leopard (*Panthera pardus*) and:

A further three mammals have a **Near-Threatened** status including the Brown Hyena (*Hyaena brunnea*), the African Clawless Otter (*Aonyx capensis*) and Littledale's Whistling Rat (*Parotomys littledalei*) occur in this biome.

The on-site flows only occur after rain events and is dry most of the year;

The area of disturbance will be limited to trenching and pitting and as such the impacts can be managed, minimized and/or completely be prevented.

The prospecting activities can be planned with no disturbance to the natural vegetation.

The impact on the heritage resources can be mitigated with the protocols contained in the Heritage impact assessment which mainly has a protocol for chance find.

The operation is not water intensive and as such water requirements will be significantly low and so is the impact on water. Since the prospecting activities will be undertaken on dry land the impacts on water sources is considered **very low**;

Prospecting activities are not labour intensive but in this particular scenario the anticipated 9 to 15 jobs can be considered significant on the socio-economic status of the Goodhouse community;

The prospecting site is located outside town or residential areas, the noise and visual impacts will have negligible significance.

(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.



- Pegmatite Target areas
- **Diamond Alluvial Pits**
- Prospecting Infrastructure-Office, Toilets, Stores
- Stockpile Area
- Mobile Plant

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

POSITIVE IMPACTS

Employment Opportunities: This operation will require the employment of yellow fleet operators and it is anticipated that 15 people would be employed during the prospecting cycle. FCL will place emphasis on the employment of women, the youth and people with disability.

SMME Support: The prospecting 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 Section that training should be provided to operators. This training should be conducted by accredited trainers and assessors. This allow operators 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 immediate businesses.

Mineral Reserve Quantification: The presence of alluvial diamond gravels and pegmatite seams on site will be verified and thereafter the economic value of the manganese will be determined which could ultimately lead to the establishment of a mine. The mine itself have significant socioeconomic value. In the event that a viable reserve is confirmed, there would be high degree of positive impacts such as employment of large number of local residents, socio-economic balance of the local community and on the National and Provincial scale mining contribute highly to the Gross Domestic Product (GDP).

Revenue Generated to the State and Local authorities: FCL will have to pay taxes and levies to the State and the Local authorities.

NEGATIVE IMPACTS

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

Land use alternative conflicts: The site is not zoned for mining/industrial activities. This will create a parallel demand for land as successful prospecting activities will result in the establishment of a mine. A thorough consultation must be undertaken with all affected parties.

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 prospecting machinery and equipment on site will attract criminals who would seek to steal and sell such equipment. Diamonds is a mineral well sought after and are prone to theft. A lucrative commodity for thieves is the steal of diesel as it is easily sellable.

Noise Generation: The site is located just over a 6 km from Goodhouse Town, the plant and the yellow fleet will create noise that might echo to the local town.

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

Disturbance to Current Landowner/Land Occupier Activities: The bulk sampling activities through trenches and pits will have a disturbance to the current farm activities. Proper planning in consultation with the owner and occupier of the land need to be conducted.

Water Use Competition: The area is known to have a limited source of water and is a scarce commodity. The dust suppression system on the mobile plant and watering down of roads will be a major consumer of water which might give rise to conflict.

Soil Contamination and disturbance to Soil structure: The trenching 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.

Destruction of Heritage resources: During the prospecting activities heritage resources might be destroyed.

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 environmental sustainable prospecting operation by the management, remediation or elimination of the environment impacts through the implementation and adherence of mitigation measures as legislatively required.

The abovementioned outcomes can be achieved through the implementation of the following impact specified objectives and their outcomes:

- Prevention of soil pollution due to chemical spillage
 - Regular maintenance of all TMM's
 - Immediate rehabilitation of an affected area
 - Suitable disposal of contaminated soil
- Reduction of noise levels caused by TMM's
 - Strict adherence to shift and operating hours
 - Noise reduction modifications to earth moving machinery
 - Zero tolerance approach to permissible
- Minimizing of vegetation loss caused by construction and site maintenance:
 - Vegetation clearing control
 - Rip and rehabilitation of unnecessary compacted areas
 - Adherence to mine roads
 - Implementation of a no collection and no open fire policy
- Minimization of dust upliftment causing loss of air quality
 - Watering of all dirt roads
 - Adherence to speed limits
 - Proper loading practise
- Surface and ground water quality degradation
 - Implementation of ground water monitoring system
 - Storm water control
 - Adherence to water management guidelines
- Waste disposal
 - Implementation of on-site waste disposal facilities
 - Waste removal schedules
 - Practise of good housekeeping

Water Pollution Management Facilities Sewage Plant

No sewage plant will be required for the purpose of this project. Sewage on site will

be handled by means of chemical toilets and French latrines both at the fixed and mobile operation units.

Pollution Control Systems.

Practically horizontal surface near the Plant site eliminates risk of slime spillage. The waste and tailings do not therefore constitute a pollution risk to the surface water system.

The fact that the mineral processing method does not utilise any chemicals eliminates the need for surface water pollution control structures at the plant.

The workshop / maintenance / storage area (enclosed in the fenced campsite) is the only area in which pollution and contamination may occur as a result of hydrocarbon spillages, so standard pollution containment

measures will be in place. The work areas and diesel tank storage areas will be underlain with a concrete floor (or another approved impermeable layer), contained by a bund wall and sloped toward toe trenches leading to collection sumps). No runoff will be allowed to flow through this area, and no contaminated water from within the areas will be allowed to enter the surrounding environment.

Potable Water Plant

No potable water plant is required for this operation. Drinkable water is available from the river and borehole sources.

Workshops, Administration and Other Buildings

A workshop / maintenance / storage yard is located at the main campsite complex. Emergency repairs will be done on the digging sites, as they are required.

Housing, Recreation and Other Employee Facilities.

No housing for company employees is required for this operation.

Transport

Dump trucks are used on the site to transport waste rock as required. These vehicles will keep to a defined path and graded routes wherever possible. Adherence to a Traffic Management Plan will be enforced.

Disturbances of Watercourses

No disturbance to any watercourse is anticipated.

Storm water (Diamonds)

The absence of long-term temporary and permanent mine dumps (i.e. the excavations will be backfilled to 100% on an ongoing basis) and the fact that the natural slopes are gentle on the site requires a minimal need for storm water control structures at the prospecting sites.

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:
Placement of plant and infrastructure to avoid any contamination to the water sources. The least disturbance to the natural Fauna and Flora on the farms.
The proximity of the mineral resource to the mobile plant to minimise the development of access and prospecting roads.
The placement of infrastructure and plant 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 river;

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 area only; and

Threatened species must be rescued and relocated should they be within area of disturbance.

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.

The absence of Heritage significance areas and artefacts was based on desktop studies using pre-existing literature and GIS Software Programs

o) Reasoned opinion as to whether the proposed activity should or should not be authorised

Reasons why the activity should be authorized or not.

It is my opinion that the activity be authorised as the positive impacts far outweigh the negative. The operation proof to have a long-term positive effect on the socio-economic, physical and especially land use after prospecting. The air quality monitoring would further ensure that if any asbestos is found that impact on air quality, this would be identified and preventative measures taken to ensure no exposure to future activities on the farms. The excavations and subsided areas would be backfilled. There is no reason why the activity should not be authorized. The disturbance on biodiversity can be full reversed once the prospecting 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 drilling results.

If the protocols contained in the heritage impact assessment report is adhered to, destruction of any resource would not occur.

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.

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

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 prospecting 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.

(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

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 **R51007.72** due to the prospecting activities conducted. The financial provision quantum guarantee will be paid at the DMR rehabilitation account to cover the rehabilitation and/or management of negative environmental impacts.

No	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighing factor 1	Amount Rands
1	Dismantling of processing plant and structures. (Mobile)	m ³	1600	14.45	1	1	23120

ii) Motivation for the deviation.

None

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 prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

The prospecting 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 Goodhouse and Springbok for the supply of prospecting 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 spend on fixed assets
- The monthly operational expenditure for consumables (OPEX)
- Revenue- the total value of sales arising from the sale of manganese and iron ore recovered

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

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(j)(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).

Based on available literature the study is not located on a Heritage sensitive site

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 PART A, section 1(a) herein as required).

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 PART 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)



Figure : Composite Map

- Pegmatite Target areas
- Diamond Alluvial Pits
- Prospecting Infrastructure-Office, Toilets, Stores
- Stockpile Area
- Mobile Plant

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 in 2.4 herein)

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 health and safety of all humans and animals that may be affected by the activities.
- The last closure objective is that the study area is closed efficiently, cost effectively and in accordance with government policy.

- ii) **The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity.**

Develop a Baseline Environmental Risk Assessment with particular focus on possible environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation and the remedial measures that must be taken. The Risk Assessment should have clear timeframes for the monitoring process and clearly defined roles of responsibilities.

Develop appropriate policies, procedures and standards to ensure firstly that; All adverse environmental damage that might occur is identified

Secondly; appropriate measures taken to eliminate the damage

Thirdly; if any damage occur it is minimized and controls put in place to avoid a re-occurrence.

- iii) **Potential risk of Acid Mine Drainage.** (Indicate whether or not the mining can result in acid mine drainage).

No acid mine drainage

iv) Steps taken to investigate, assess, and evaluate the impact of acid mine drainage.

For this operation it is not required.

v) Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage.

For this operation it is not required.

vi) Volumes and rate of water use required for the mining, trenching or bulk sampling operation.

The quantities of water to be used are still to be determined but it is anticipated that PSR Construction CC will use water from the municipality connections and should the water usage trigger the National Water Act (36;1998) listed water uses, a water use license will be applied for. Water would be confined to domestic and dust suppression use.

vii) Has a water use licence has been applied for?

A water use licence is not required for this project but should any NWA water uses be triggered a water use license will be applied for.

viii) Impacts to be mitigated in their respective phases

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

ACTIVITIES (as listed in 2.11.1)	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 disturbance (volumes, tonnages and hectares or m ²)	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 with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	TIME PERIOD FOR IMPLEMENTATION 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 regards to Rehabilitation, therefore state either:-.. Upon cessation of the individual activity or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Site Establishment	Construction phase	0.5 ha	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.	1 month
Temporal Roads construction	Construction phase	500m ²	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.	1 month
Temporal storage of hydrocarb	Operational	0.0025ha	Demolishing of cement slabs and bund wall during decommissioning phase	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.	During last Phase
Open Cast Prospecting	Operational phase	0.0016 ha	Dust suppression by means of water spraying.	Compliance with NEMA, NWA, MPRDA, NEM:WA and the	Month 3-120

			<p>Dust fall-out buckets.</p> <p>Concurrent rehabilitation will be done by backfilling the trenches. Topsoil will be spread on top to allow plant succession.</p> <p>Site Access restriction Monitoring. Drip trays placed under each stationary equipment.</p> <p>Seeding with indigenous plant. Speed limit of 30km/h.</p> <p>Labelled Waste containers.</p> <p>Vegetation will be protected by avoiding unnecessary clearance and by using existing roads at all times. No poaching allowed.</p> <p>Comply with occupational noise regulations of the Occupational Health and Safety Act, Act 85 of 1993.</p> <p>Provide ear plugs for noise pollution.</p>	NEMA principles will be done.	
Final rehabilitation	Rehabilitation phase	0.5ha	<p>All infrastructure removed from site. Waste will be disposed of at licenced facilities.</p> <p>Any contaminated soils will be cleaned and rehabilitated.</p> <p>All compacted surfaces will be ripped to a depth of 300mm. The successful establishment of vegetation is important to ensure the return of animals in the area. if sucseccion does not take place, a seeding programme in consultation with the ecologist should be implemented.</p>	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.	Last Phase

e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated 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, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	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- water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. <ul style="list-style-type: none"> • 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	Surface disturbance Air Pollution Topsoil	Fauna and Flora Topography	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	Surface disturbance Air Pollution Topsoil	Fauna and Flora Topography	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 /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.

Open Cast Prospecting (Trenching)	Surface disturbance Air Pollution Noise Surface /ground water contamination	Visual Geology Topography Fauna and Flora Visibility	Operational phase	Dust suppression by means of water spraying. Dust fall-out buckets. Concurrent rehabilitation will be done by backfilling the trenches.	Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.
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	Archaeology			<p>Topsoil will be spread on top to allow plant succession.</p> <p>Site Access restriction Monitoring. Drip trays placed under each stationary equipment.</p> <p>Seeding with indigenous plant. Speed limit of 30km/h.</p> <p>Labelled Waste containers.</p> <p>Vegetation will be protected by avoiding unnecessary clearance and by using existing roads at all times.</p> <p>No poaching allowed.</p> <p>Comply with occupational noise regulations of the Occupational Health and Safety Act, Act 85 of 1993.</p> <p>Provide ear plugs for noise pollution.</p>	
Final rehabilitation	Final rehabilitation phase	Geology Topography Fauna and Flora	<p>All infrastructure removed from site</p> <p>Waste will be disposed of at licenced facilities.</p> <p>Any contaminated soils will be cleaned and rehabilitated.</p> <p>All compacted surfaces will be ripped to a depth of 300mm.</p> <p>The successful establishment of vegetation is important to ensure the return</p>	<p>Compliance with NEMA, NWA, MPRDA, NEM:WA and the NEMA principles will be done.</p>	Last Phase

			<p>of animals in the area. if sucseccion does not take place, a seeding programme in consultation with the ecologist should be implemented. Boreholes will be capped and made safe, in agreement with the landowner.</p>		
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f) Impact Management Actions

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

ACTIVITY whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply and dams, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation..	TIME PERIOD FOR IMPLEMENTATION 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 prospecting as the case may be.	COMPLIANCE WITH STANDARDS (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	Surface disturbance Air Pollution Topsoil	Fauna and Flora Topography	Construction phase	Dust suppression by means of water spraying. Rehabilitation, Ripping of compact ground. Seeding with indigenous plant. Speed limits of 30km per hour
Temporal Roads construction	Surface disturbance Air Pollution Topsoil	Fauna and Flora Topography	Construction phase	Dust suppression by means of water spraying. Roads will be ripped to a depth of 300mm in order to allow vegetation growth
Temporal storage of hydrocarb	Surface /ground water contamination	Contamination	Operational	Demolishing of cement slabs and bund wall during decommissioning phase
Open Cast Prospecting	Surface disturbance	Visual	Operational phase	Dust suppression by means of

	Air Pollution Noise Surface /ground water contamination Archaeology	Geology Topography Fauna and Flora Visibility		<p>water spraying. Dust fall-out buckets.</p> <p>Concurrent rehabilitation will be done by backfilling the trenches. Topsoil will be spread on top to allow plant succession.</p> <p>Site Access restriction Monitoring. Drip trays placed under each stationary equipment. Seeding with indigenous plant. Speed limit of 30km/h. Labelled Waste containers.</p> <p>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 Safety Act, Act 85 of 1993.</p> <p>Provide ear plugs for noise pollution.</p>
Decommissioning and final rehabilitation	Surface disturbance Air Pollution Noise Surface /ground water contamination	Fauna and Flora Topography	Decommissioning phase	<p>All infrastructure removed from site Waste will be disposed of at licenced facilities. Any contaminated soils will be cleaned and rehabilitated. All compacted surfaces will be ripped to a depth of 300mm. The successful establishment of vegetation is important to ensure the return of animals in the area. if sucseccion does not take</p>

				<p>place, a seeding programme in consultation with the ecologist should be implemented.</p> <p>Boreholes will be capped and made safe, in agreement with the landowner</p>
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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 Regulation 22 (2) (d) as described in 2.4 herein.**

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 health and safety of all humans and animals that may be 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.**

To be Confirmed by M A Goliath .

- (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:

All Plant equipment, diesel bay and infrastructure, temporal infrastructure must be removed and rehabilitated to original ground level and vegetated. On completion of the prospecting 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 prospecting right, mining right, retention permit or prospecting permit lapses, is cancelled or is abandoned or when any prospecting or prospecting 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 prospecting 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 prospecting area and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on the site.

On-going seepage, control of rain water

No monitoring of ground or surface water will take place, except if so requested by the DWS .

Long term stability and safety

It will be the objective of the company management to ensure the long term 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. Self-sustaining vegetation will result in the control of erosion and dust and no further rehabilitation are 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 — Kimberley, as described in Regulation 55.

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 operation will be to create an acceptable post-prospecting environment and land-use. Therefore all agreed commitments will be implemented by the Company Management.

D. After-effects following closure:

Acid mine drainage

No potential for bad quality leach ate or acid mine drainage development exist after operation closure.

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 obtain a 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-Kimberley, as described in Regulation 55.

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

The ultimate rehabilitation of the prospecting 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 by the landowner 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 also ensuring that the site is 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	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount Rands
1	Dismantling of processing plant and structures. (Mobile)	m ³	1600	14.45	1	1	23120
2(A)	Demolition of steel buildings and structures (Temporal)	m ²		201.35	1	1	
2(B)	Demolition of reinforced concrete buildings and structures (Diesel bay and Workshop)	m ²		296.72	1	1	
3	Rehabilitation of access roads remain for future use	m ²		36.03	1	1	
4(A)	Demolition and rehabilitation of electrical railway lines	m	0	349.71	1	1	0
4(B)	Demolition and rehabilitation of non-electrical railway lines	m	0	190.75	1	1	0
5	Demolition of housing and/or administration facilities	m ²	40	402.70	1	1	16108
6	Opencast rehabilitation including final voids and ramps	ha	0.005	204951.85	1	1	
7	Sealing of shafts and inclines	m ³	0	108.09	1	1	0
8(A)	Rehabilitation of overburden and spoils	ha	0.001	140732.19	1	1	140.73

8(B)	Rehabilitation of processing waste deposits and evaporation ponds(non-polluting potential)	ha	0.004	175279.40	1	1	701.11
8(C)	Rehabilitation of processing waste deposits and evaporation ponds(polluting potential)	ha	0.00 ha	509094.45	1	1	0
9	Rehabilitation of subsided areas (Excavations)	ha	0.016	117842.01	3	1	1885.47
10	General surface rehabilitation	ha	0.02	111483.63	3	1	2229.67
11	River diversions	ha	0	111483.63	1	1	0
12	Fencing	m	0	127.17	1	1	0
13	Water management	ha	0.004	42389.21	10	1	169.56
14	2 to 3 years of maintenance and after care	ha			1	1	
15(A)	Specialist study	sum	1				
15(B)	Specialist study	sum					0
					Subtotal		44354.54
	Preliminary and General				Weighing factor 2		
					1		
	Contingencies			Subtotal	44354.54		
				VAT(15%)	6653.18		
				Grand Total	51007.72		

Adjusted to R100 000.00

- (f) Confirm that the financial provision will be provided as determined.**

I, Felicity Cecelia Links, confirm that financial provision has been provided as determined.

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 minimise 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	Site Manager/ Environmentalist	Monitoring will be done on an 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 on an annual basis or after a heavy rain event
Air quality	To control the incidence of unacceptable levels of dust pollution on site	To ensure that the mine minimise dust omission, so that dust does not become a nuisance for affected parties and health hazard	Site Manager/ Foreman appointed SHE Consultant	Visual inspection will be done and managed by 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 minimise vegetation destruction in drill areas, and therefore a habitat for wildlife; and To eliminate poaching and the extermination of animal species	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
	within the boundaries of the study area as well as the surroundings area.			
Flora	To minimise the destruction of vegetation units; and To control invasion of 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 on a 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 will be 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 done to monitor the quality of the surface water
Ground water	To minimise 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 done to monitor the levels and quality
Archaeological	Prevent destruction of sources	Awareness program	Site Manager/ Environmentalist	Monitoring

l) Indicate the frequency of the submission of the performance assessment report.

Annual Performance Assessment and Environmental Audit will be conducted and submitted

m) Environmental Awareness Plan (SEE APPENX G)

(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 given to 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 river 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 discharge to the atmosphere. Share transport or use public transport
 - (ii) Don't burn any rubbish, the smoke pollution 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 gazing of farmlands, keep vegetation on surface on the land to prevent soil erosion
 - (ii) Plant trees

• **HAZARDOUS SUBSTANCE 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 point of store
- d. Compressed gas storage requirement
- e. Flammable substances store requirement

• **INCIDENT AND EMERGENCY REPORTING**

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**

- a. 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 Principle Inspector of Mine Health and Safety, Kimberley, Northern Cape Province.

Fauna and Flora will be monitored annually for the Performance Assessment Report.

Annual Performance Assessment and financial quantum reports will be conducted.

Employees must be instructed on how to tell the difference between hazardous waste and general waste.

Employees should be trained on how to separate hazardous waste and general waste and where to dispose of these wastes

2) UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports Yes
- b) the inclusion of comments and inputs from stakeholders and I&APs ; Yes
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; Yes and
- d) the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed; Yes

Signature of the environmental assessment practitioner:

M A Goliath

Date: 20/05/2022

-END-

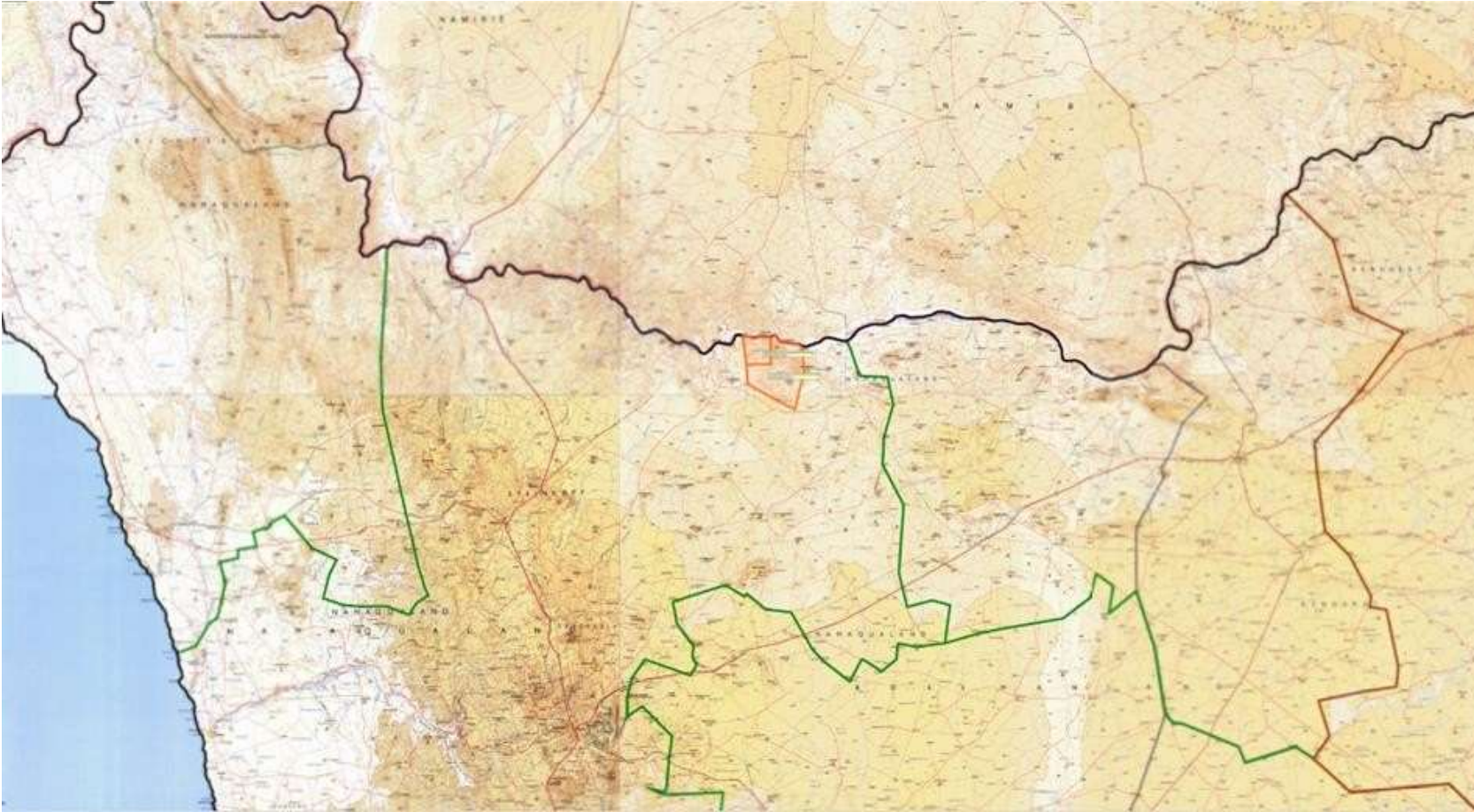
REFERENCES AND ACKNOWLEDGMENTS

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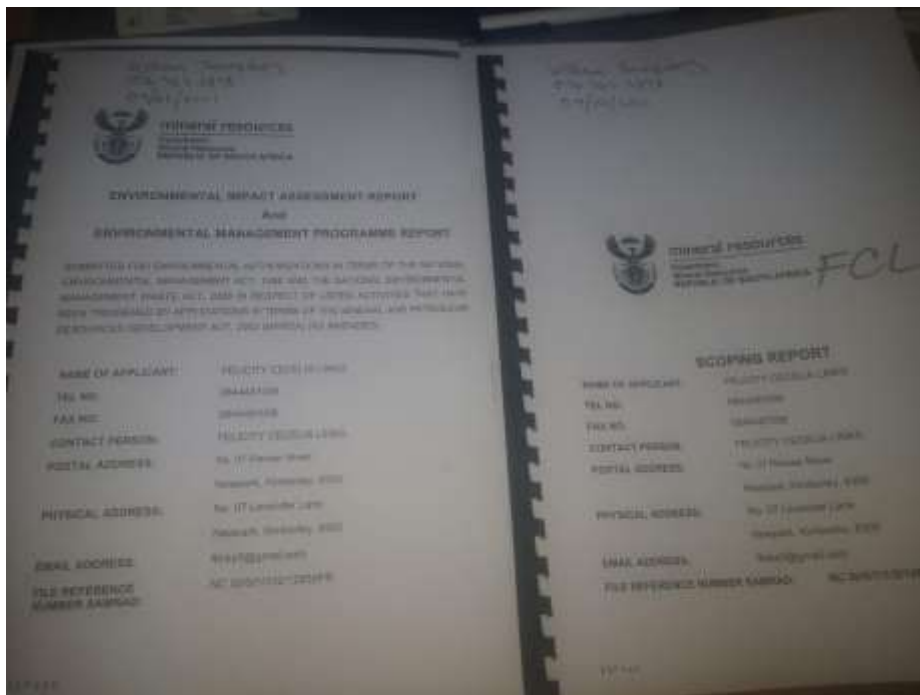
APPENDIX A LOCALITY PLAN



**APPENDIX B: NEWSPAPER ADVERT
EIA PUBLIC PARTICIPATION PROCESS
Placement at Steinkopf Community Centre**



Placement at Nama Khoi Municipality



Advertisement

PROJECT NUMBER: 027-712-2051 REFERENCE: EHV/TH	E-MAIL: 027-712-2051@ecmh.gov.za CONTACT NUMBER: 027-712-2051 REFERENCE: EHV/TH
NEWSPAPER ADVERT FOR PUBLIC PARTICIPATION PROCESS	
PRILEDFY CECILIA LINKS has 51 farms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002 as amended), the National Environmental Act, 1989 (Act 107 of 1989 as amended), lodged an application for a Prospecting Right with due compliance to The Department of Mineral Resources and Energy, Northern Cape, on the following farm and mineral SMP REFERENCE NC38/ND1010383 PR	
Farm: Ramest 248 28 and Heer 28	
Minerals: Titanium Achromal and Fegititite	
LISTED ACTIVITIES:	
GMR 107 Listed Activity 1: Activity 20 Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Development Act, 2002 (Act No.28 of 2002), including: associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource or the primary processing of a mineral resource including mining, extraction, crushing, comminuting, crushing, screening or washing	
GMR 125 Listed Activity 2: Activity 16 The removal and disposal of materials contemplated in terms of section 50 of the Mineral and Petroleum Resources Development Act, 2002 (Act No.28 of 2002), including:	
GMR 127 Listed Activity 1 Activity 27 The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation	
Activity 9: "The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water: (a) with an internal diameter of 0.36 metres or more, or with a peak throughput of 120 litres per second or more	
Activity 12: "The development of: (a) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size, (b) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size, (c) bulk storm water outlet structures exceeding 100 square metres in size.	
Regulation GMR 704, published on 4 June 1999 in terms of the National Water Act, (use of water for mining and related activities) Activity 15: The construction, maintenance and rehabilitation of temporary stockpiles resulting from activities which require a prospecting right Production stockpiles, Waste stockpiles and Tipping stockpiles	
Activity 23: "The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 10000 cubic metres."	
The Scoping as well as the EIA and EMP reports are available at the Farm's Local Municipal Offices in Springbok, The Community Centres in Steynburg and in Goodhouse from the 03 February 2021 for a period of 30 Days All interested and/or Affected parties are hereby invited to register on the application database (gsal@maicm@gmail.com), or lodge any complaints in writing to: M A Gullath, 25 Goedehoop Avenue, Rooyden, Kimberley, 8381	
PUBLIC MEETING Goodhouse Community Centre, 13.00, 16 th March 2021	

APPENDIX C PUBLIC MEETING

PUBLIC PARTICIPATING MEETING

HELD AT GOODHOUSE

DATE: 16 MARCH 2021

VENUE: NAMA-KHOI SERVICE POINT - GOODHOUSE

1. Opening and Welcome

Mr Morne Links, acted as the chairperson and welcomed everyone present and informed all to observe the Covid 19 Protocol rules and regulations. He circulated an attendance register which was completed and signed by all present.

2. Purpose

Mr Fernando Ntuli in his capacity as Ward Committee Member of Good house explained the purpose of the meeting and informed all present that Mr Morne Links will give a presentation highlighting the purpose of the meeting. The presentation by Mr. Links is attached as Appendix 1 to the minutes.

3. Presentation

Mr Links made the presentation to the meeting and highlighted, the prospecting application area and its location, the minerals applied for, the environmental impacts that is expected on the environment, the positive and negative impacts and the closure objectives.

He also informed the meeting where the Draft Scoping Report and Environmental Impact Assessment and Environmental Management Programme Reports can be viewed for input and comments.

4. Discussions

The majority of the questions were centered on job creations and how the community will benefit from such an initiative. Mr. Links explained that the employees would be sourced from Goodhouse, as the project does not require employees with special skills except for the surveyor, geologist, medical practitioner and occupational hygienist which will be on a contract basis but will be from the Nama-Khoi local municipal area. The response from the meeting is that the project is viewed as beneficial to the community as it will provide much needed jobs and skills development.

The members however reminded the Chairperson to ensure that the job opportunities must be made available to the local community.

Mr. Links further enquired if any objections or concerns should be noted to which none was entered.

5. Conclusion

The meeting concluded on a positive note and all understood the purposes of the meeting and have no objections but rather see it as beneficial for the community of Goodhouse in terms of job creation and skills transfer.

6. Meeting Adjourned

M.J. Links

PUBLIC MEETING PRESENTATION



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

FCL

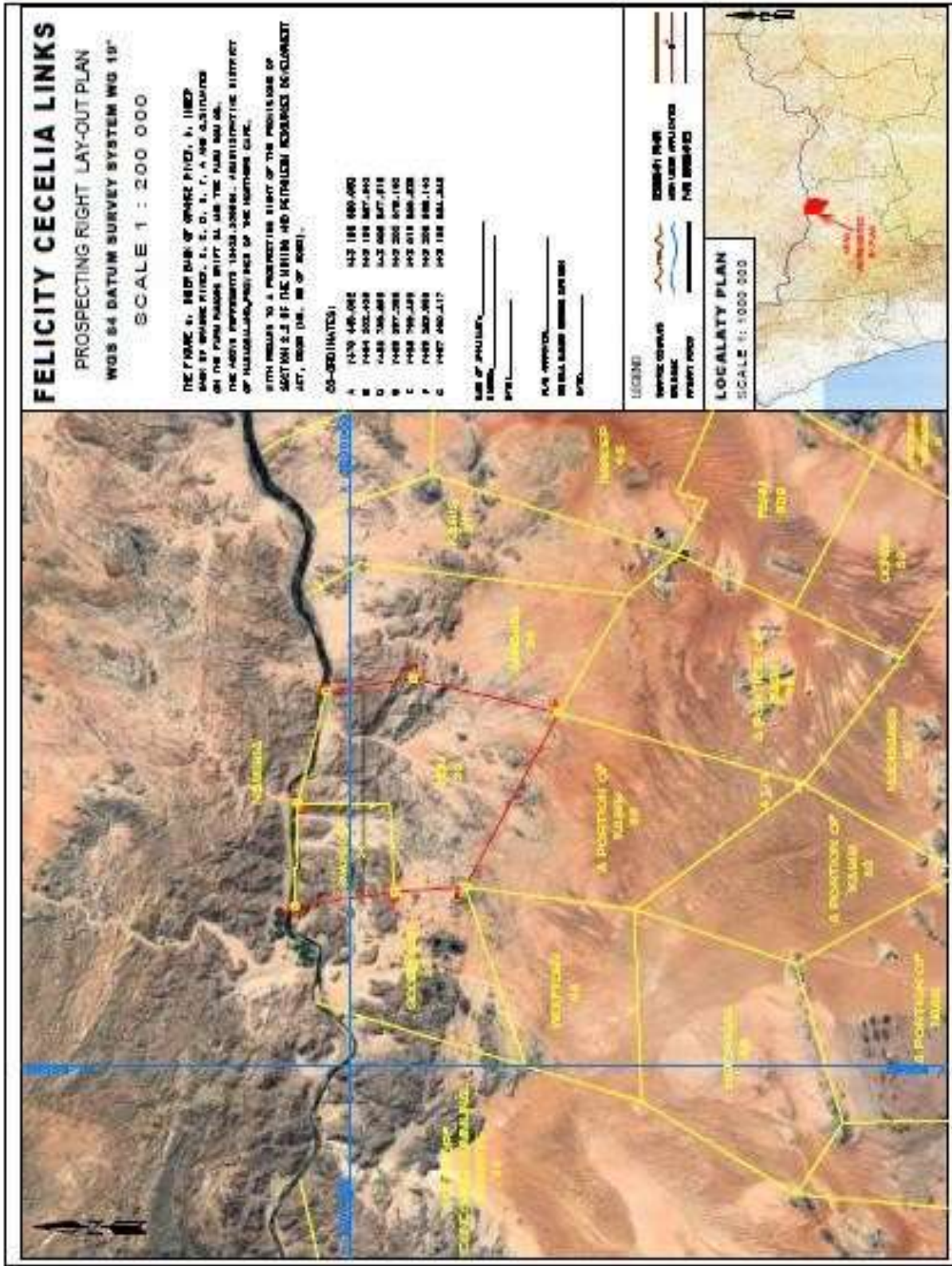
NAME OF APPLICANT: FELICITY CECELIA LINKS

**FILE REFERENCE NUMBER DMRE NC 30/5/1/1/2/12835 PR
SAMRAD:**

ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) INFORMATION

EAP:	M A Goliath		
Contact person (if different from EAP):	M A Goliath		
Company:	GOLCOR (PTY) LTD		
Physical address:	23 Goedehoop Avenue, Royldene, Kimberley		
Postal address:	23 Goedehoop Avenue, Royldene, Kimberley		
Postal code:	8301	Cell:	0824523693
Telephone:	0824523693	Fax:	goliathmalcolm@yahoo.com
E-mail:	goliathmalcolm@yahoo.com		

PLAN



SCOPE OF PROPOSED ACTIVITY

LISTED ACTIVITIES DESCRIPTION OF ACTIVITIES AND INFRASTRUCTURE

<p>NAME OF ACTIVITY</p> <p>(E.g. For prospecting - 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.)</p>	<p>Aerial extent of the Activity Ha or m²</p>	<p>LISTED ACTIVITY</p> <p>(Mark with an X where applicable or affected).</p>	<p>APPLICABLE LISTING NOTICE</p> <p>(GNR 544, GNR 545 or GNR 546)</p>	<p>WASTE MANAGEMENT AUTHORISATION</p> <p>(Indicate whether an authorisation is required in terms of the Waste Management Act). (Mark with an X)</p>
<p>Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Development Act, 2002 (Act No.28 of 2002), including-</p> <p>(a) associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource: or</p>	<p>15426. 3360 ha lodged for the surveyed portion only.</p>	<p>X</p>	<p>GNR 327 Ln 1, Activity 20</p>	
<p>(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 20 of Listing Notice 1</p>				

<p>The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including- (c) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource: (Activity 19 of Listing Notice 2)</p>	<p>15426. 3360 ha lodged for the surveyed portion only.</p>	<p>X</p>	<p>GNR 325 Listed 2,Activity 19</p>	
<p>Activity 27 of GNR 327 The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (iii) the undertaking of a linear activity; or (iv) maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>15426. 3360 ha lodged for the surveyed portion only.</p>	<p>X</p>	<p>GNR 327 LN 1 Activity 27</p>	
<p>Activity 25: “The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.”</p>	<p>Chemical toilets and wash bays for the site.</p>	<p>X</p>	<p>NEMA: LN1 (GNR 327)</p>	
<p>Activity 9: “The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water- (vii) with an internal diameter of 0.36 metres or more; or with a peak throughput of 120 litres per second or more</p>	<p>Water distribution pipelines</p>	<p>X</p>	<p>NEMA: LN1 (GNR 327)</p>	

Activity 12 : “The development of- (vii) dams, where the dam, including infrastructure and water surface area, exceeds 100 square meters in size;	Clean and dirty water systems on the site. It is anticipated that the operations will			
(viii) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square meters in size;	establish storm water control berms and trenches to separate clean and dirty water on the prospecting site			
(ix) bulk storm water outlet structures exceeding 100 square metres in size;				
Regulation GNR 704, published on 4 June 1999 in terms of the National Water Act (use of water for mining and related activities)				

DEVELOPMENT FOOTPRINT	
Mobile Plant Processing Area	1600m ²
Temporary Waste Stockpiles	1000m ²
Topsoil Stockpiles	500m ²
Production Treatment Stockpiles	500m ²
Portable Ablution Facilities	25m ²
Clear Process Water Facilities (JOJO)	160m ³
Workshop	300m ²
Site Office	40m ²
Excavations	1160m ²
Domestic Waste Facility	4m ²

DESCRIPTION OF ACTIVITIES AND INFRASTRUCTURE

Mineral: Alluvial

Diamonds and Pegmatites

(Compositionally, the pegmatites consist of the **feldspars**, **quartz**, and **muscovite** with local concentrations of accessory minerals such as **beryl**, **spodumene**, **tourmaline**, **columbite-tantalite**, **triphylite-lithiophilite**, **amblygonite**, and minor sulfides and arsenides)

Type of right	Province	Code	Commodity Description
Prospecting right	Northern Cape	DA	DIAMOND (ALLUVIAL) (DA)
Prospecting right	Northern Cape	GAt	AMETHYST (GEMSTONE) (GAt)
Prospecting right	Northern Cape	GTm	TOURMALINE (GEMSTONE) (GTm)
Prospecting right	Northern Cape	GRq	ROSE QUARTZ (GEMSTONE) (GRq)
Prospecting right	Northern Cape	GQ	QUARTZ (GEMSTONE) (GQ)
Prospecting right	Northern Cape	GAq	AQUAMARINE (GEMSTONE) (GAq)
Prospecting right	Northern Cape	GCI	CITRINE (GEMSTONE) (GCI)
Prospecting right	Northern Cape	GFs	FELDSPAR (GEMSTONE) (GFs)
Prospecting right	Northern Cape	GS	GEMSTONES EXCEPT DIAMONDS (GS)
Prospecting right	Northern Cape	GOp	OPAL (GEMSTONE) (GOp)

(f) NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

Diamonds remain one of the most sought gemstones in the world. This makes this project very lucrative as the diamond market experiences very little fluctuation. The demand currently and for the new future is in the increase due to the Corona pandemic.

The increasing markets in Asia seeking semi-precious stones is ever expanding. Rose Quartz, Tourmaline, Sugilite, Quartz and Aquamarine are precious and semi-precious stones are in high demand due to the healing and good fortune beliefs to be characteristic of the stones.

The farm location is in an area where diamonds and pegmatites are known to occur. The prospecting operation will provide employment to 12 semi-skilled employees from the local and surrounding communities of which the labour sending area can be considered to be from Goodhouse up to and including Springbok.

The study area further does not have any human settlement that will impact on the people and their activity. 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
- Address underutilization of the region's natural resources and economic opportunities

Positive impact of the continuation of the prospecting activities include:

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

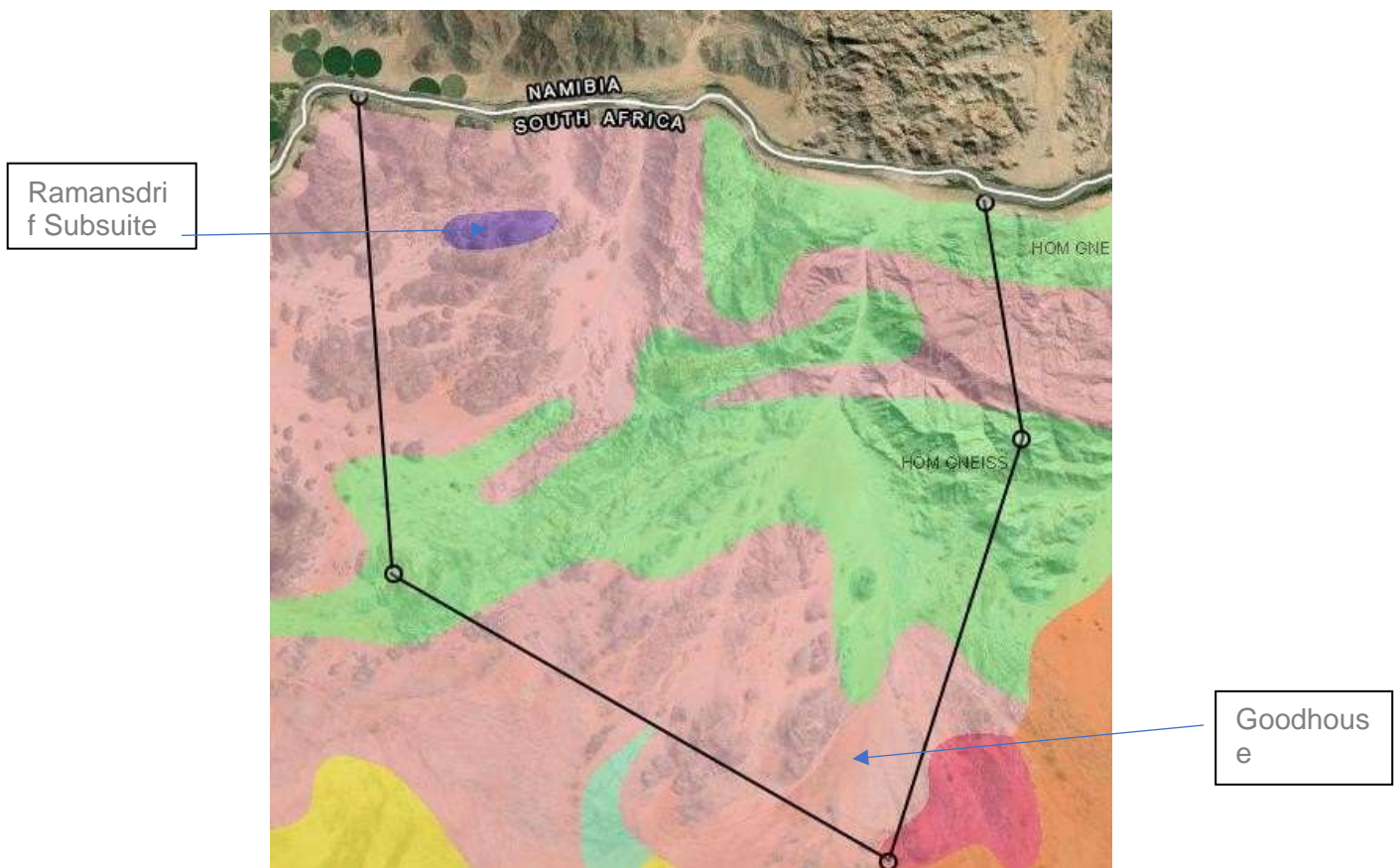
ENVIRONMENTAL ATTRIBUTES

Topography

The mean elevation on the study area on the most northern part of the study area at Goodhouse is at 231maml and increasing to the west southerly hills Hahn Romansberg 672 maml.

Geology and Soils

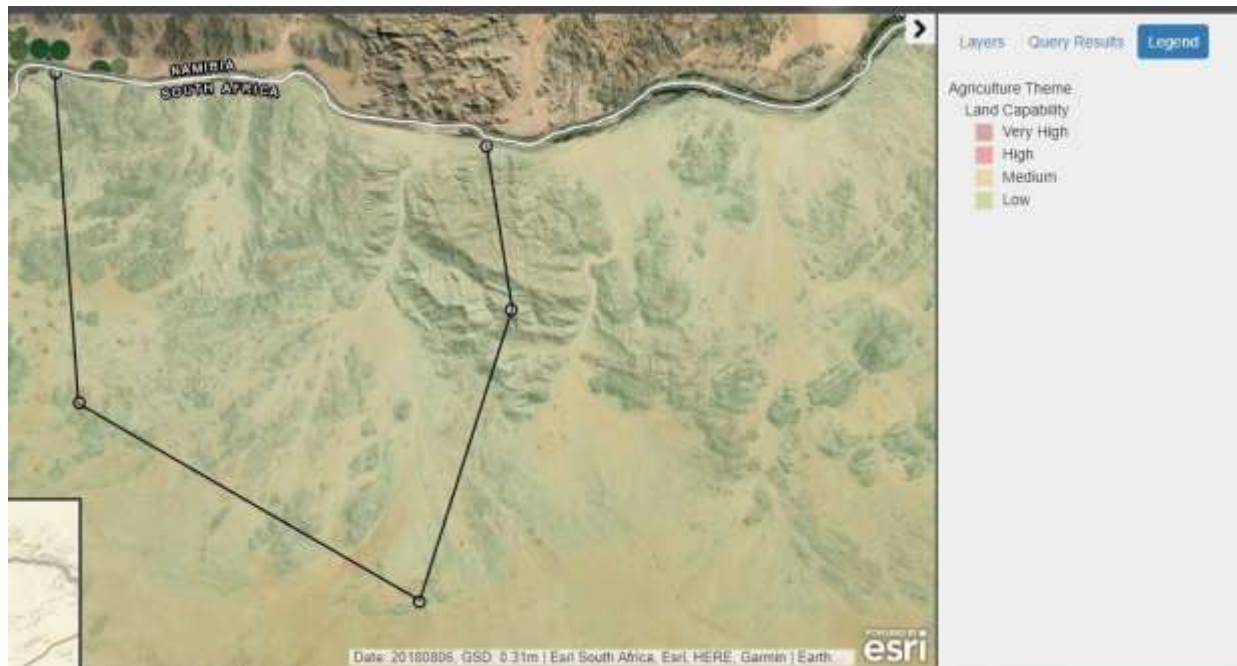
Geology & Soils Mostly Quaternary sediments (sand, calcrete) with some contribution of the Pre-Pleistocene Kalahari Group sediments in the east. Typically the surface is covered by sands >300 mm deep, forming dunes in places. Af land type dominates.



The study area has the presence of the Ramansdrift, Goodhouse and the Hom gneiss subsuites.

Land Capability

Study area contains soils having very severe limitations for cultivation.



Regional Biodiversity

The study area falls within the Desert Biome.

The Desert Biome is found under very harsh environmental conditions which are more extreme than those found in the Succulent Karoo Biome and Nama-Karoo Biome.

The vegetation of the Desert Biome is characterized by dominance of annual plants (often annual grasses).

Surface Water

The Orange river forms the northern border of the study area which also forms the border between South Africa and Namibia.

Drainage lines are found on the study area which mouths into the Orange River during period of high rainfall.

Surface Water

No surface water was observed on the study area during the site visit.

River Diversions

No river diversion to the Orange River will be made for the project activities.

Wetlands

The Orange River forms the northern boundary of the study area. This area can be seen as a wetland and the prospecting activities should be placed outside of the 1:100 line.

Depth to Groundwater

The study area has a groundwater depth of 41-50m

Climate

Major rainfall peak between February and April and a minor peak in November. MAP ranges from about 70–110 mm.

SOCIO-ECONOMIC PROFILE



IMPACTS AND RISKS IDENTIFIED

Here a list of possible impacts assessed with the activity undertaken.

(iv)

Potential Impacts	Nature	Reversible
Land use conflicts	Negative	Yes
Legal Contraventions –Operating outside authorised scope	Negative	Yes
Topography	No Impact	Yes
Soil compaction, erosion and pollution	No Impact	Yes
Water pollution and over extraction	No Impact	Yes
Dust generation from prospecting activities	Negative	Yes
Noise pollution emanating from heavy vehicles and operating machinery	Negative	Yes
Visual impacts	No Impact	Yes
Health and Safety of Employees	Negative	No
Socio-economic conflicts with influx from other areas	Negative	Yes
Job creation	Positive	–

MITIGATION MEASURES

Below a summative impact/risk management is provided.

Noise: Directly affected, adjacent landowners in proximity to the site must be informed of the planned activities. The Drilling activities and movement of vehicles into the site should be carried out during the day between 7:00 a.m. to 17:00;

Influx of labour to site: Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment;

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: system will be implemented and sufficient waste bins will be provided for on-site;

Water: water requirement for the operation must be met through extraction from existing Municipality connections ensuring that all bylaws are adhered to; The operations will be located at least 100 metres from wetlands and streams at all times.

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

Health and Safety: All the surface opening must be barricaded and marked with reflective tape. The opening must be capped once operation ceases;

Soil Impact Management: When establishing pits, topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert storm-water around the drill pad to minimise soil erosion of the pad. Stockpiled topsoil will be used during rehabilitation activities.

POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED.

POSITIVE IMPACTS

Employment Opportunities: This operation will require the employment of yellow fleet operators and it is anticipated that 15 people would be employed during the prospecting cycle. FCL will place emphasis on the employment of women, the youth and people with disability.

SMME Support: The prospecting 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 Section that training should be provided to operators. This training should be conducted by accredited trainers and assessors. This allow operators 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 immediate businesses.

Mineral Reserve quantification: The presence of diamonds and pegmatite seams on site will be verified and thereafter the economic value of the minerals as will be determined which could ultimately lead to the establishment of a manganese mine. The mine itself have significant socioeconomic value. In the event that a viable reserve is confirmed, there would be high degree of positive impacts such as employment of large number of local residents, socio-economic balance of the local community and on the National and Provincial scale contribute highly to the Gross Domestic Product (GDP).

Revenue Generated to the State and Local authorities: FCL will have to pay taxes and levies to the State and the Local authorities.

NEGATIVE IMPACTS

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

Land use alternative conflicts: The site is not zoned for mining/industrial activities. This will create a parallel demand for land as successful prospecting activities will results in the establishment of a mine. A thorough consultation must be undertaken with all affected parties.

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 prospecting 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 a 6km from Goodhouse Town, the plant and the yellow fleet will create noise that might echo to the local town.

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

Disturbance to Current Landowner/Land Occupier Activities: The bulk sampling activities through trenches and pits will have a disturbance to the current farm activities. Proper planning in consultation with the owner and occupier of the land need to be conducted.

Water Use Competition: The area is known to have a limited source of water and is a scarce commodity. The dust suppression system on the mobile plant and watering down of roads will be a major consumer of water which might give rise to conflict.

Soil Contamination and disturbance to Soil structure: The trenching 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.

**ATTENDANCE REGISTER
PUBLIC PARTICIPATION MEETING-FC LINKS**

DATE: 16. MARCH 2021
 TIME: 13H00
 VENUE: Good House

NAME AND SURNAME	CONTACT NUMBERS	EMAIL	SIGNATURE
Fernando S. Ntuli	027 721 1103		<i>[Signature]</i>
Hanna M. Engelbrecht	027 721 1103		<i>[Signature]</i>
Jessica H. Engelbrecht	027 721 1103		<i>[Signature]</i>
Anton Ntuli			<i>[Signature]</i>
RALPH Ntuli	027 721 1103		<i>[Signature]</i>
Rose Lammie	027 721 1103		<i>[Signature]</i>
PETROS Engelbrecht			<i>[Signature]</i>
Antoinette Witbooi			<i>[Signature]</i>
Ehator Joseph	027 721 1103		S. Joseph
ERICA Ntuli	11		<i>[Signature]</i>

SALOTUS MARCUS	027721103	MARCUS
REOWICE ROMAN	" " " " "	R.A. Rom
GOLIAN LOUW	" " "	Gouw
ALVIN	" " "	Al
RENDELIN JONGES	027721105	Jonges
FRANS WOUW		Wouw
FERDINAND NTUCI	027721103	NTUCI
PAULINE MERTUS		Mertus
BARNABA AFEIKAT	0572349168	Afeikat
FRANSISCUS SANDERSON	0648200817	Sander
FELICIA KOCK	027721103	Kock
PETRUS NTULI	" " " " "	NTULI
MARNE KINKS	0710254463	KINKS
CETANUS KUSINBOG	0837337227	KUSINBOG

APPENDIX D: DATABASE

DATABASE OF I&AP's			
Name and Surname	Institute	Contact Number	Email Address / Physical / Postal Address
Hand delivered	Northern Cape Department: Co-operative Governance, Human settlements and Traditional Affairs	053 830 9400 / 22 / 25	Physical: JS du Plooy Building, 9 Cecil Sussman Street, Kimberley, 8301 Postal: Private Bag X5005, Kimberley, 8300 Web: www.coghsta.ncpa.gov.za
Mr. Jonas	Namakhoi Local Municipality- Environment	0277188119 0277188115	springbok@namakhoi.org. 4 Namakwa Street Springbok 8240
Catherine Gertze	Namakhoi Local Municipality- Ward 3 Councillor	0277188100 0798079528	springbok@namakhoi.org. 4 Namakwa Street Springbok 8240
Mr. Christiaan Fortuin	Namakwa District Municipality	027 712 8000	Private Bag X20 Van Riebeeck Street SPRINGBOK 8240 chrisf@namakwa-dm.gov.za
Hand delivered	Northern Cape Department: Agriculture, Environmental Affairs, Rural Development and Land Reform	053 838 9100	Postal: Private Bag X5018, Kimberley, 8300 Physical: 162 George Street, Kimberlite Building, Kimberley, 8301 Web: www.agrinc.gov.za
	Steinkopf Bronnesentrum / Resource Centre		Steinkopf.bsen@gmail.com
Kathleen April	Birdlife South Africa	Tel: +27 (0) 11 789 1122	Physical Address: Isdell House, 17 Hume Road, Dunkeld West 2196, Johannesburg, South Africa Postal Address: Private Bag X16, Pinegowrie, 2123 Email: info@birdlife.org.za
	Wildlife Organisation WESSA	Tel: 053 839 2717	Postal Address: PO Box 316, Kimberley Northern Cape, 8300 Website: www.wessa.org.za

APPENDIX E-EMAILS TO IAPs

Namakhoi Municipality Website Enquiry

Contact Us

Fill out the form below, we'll get back to you within 24 hours.

Malcolm Goliath

goliathmalcolm@yahoo.com

Good day, F Links are lodging a Prospecting right on the farms Ramonsdrift and Hom. I act as the Environmental Assessment Practitioner and wish to consult with the Official at the Namakhoi Municipality responsible for this function. Malcolm Goliath Cell:0824523693

Send

CONTACT DETAILS

Nama Khoi Municipality


Address:
4 Namakwa Street
Springbok
8240

Phone: +27 27 718 8100

Fax: +27 27 712 1635

Email: info@namakhoi.gov.za

FIND US



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IMPORTANT NUMBERS

General	General	027 718 8100
Emergencies	Emergencies	082 899 6766
Water	Water	027 718 8100
Electricity	Electricity	027 718 8100
Fire	Fire	027 718 8100
Traffic	Traffic	027 718 8100
Environment	Environment	027 718 8100
Halls	Halls	027 718 8100
Refuse	Refuse	027 718 8100

goliathmalcolm@yahoo.com - Y x +

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Prospecting Right Application Yahoo/Sent

Malcolm Goliath <goliathmalcolm@yahoo.com>
To: springbok@namakhoi.org Thu, Jan 28 at 3:19 PM

Namakhoi Local Municipality
Environment Section / Ward 3 Councillor
Mr. Jonas and Madam Catherine Gertze

Herewith please find attached the final draft Scoping Report and the Draft EISA and EMPr.
Kindly note inputs to the EIA and EMPr should be made within 30 days.

Kind Regards
Malcolm Goliath
0824523693

Draft S_and_...pdf 3.4MB
FINAL DRAF...pdf 3.5MB

Reply, Reply All or Forward

10% OFF For First Order WINTER SALE SHOP NOW

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NAMAKWA District Municipality

(2 unread) - goliathmalcolm@ya x +

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Inbox 2 Unread Starred Drafts Sent Archive Spam Trash Less Views Hide Photos Documents Subscriptions Groceries Deals Receipts Travel Folders Hide + New Folder Nico

Prospecting Right Application F C Links Yahoo/Sent

Malcolm Goliath <goliathmalcolm@yahoo.com>
To: chrisf@namakwa-dm.gov.za Thu, Jan 28 at 10:25 AM

The Namakwa District Municipality
Mr. Christiaan Fortuin

Herewith kindly find attach the Final Draft Sooping report and the Draft EIA and EMPR for the district municipalities input.
The EIA and EMPR has a 30 day period for input.

Regards
Malcolm Goliath
EAP

[Download all attachments as a zip file](#)

FINAL DRAF... .pdf 3.5MB
Draft S_and_L... .pdf 3.4MB

[Reply](#), [Reply All](#) or [Forward](#)

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Windows Taskbar: Type here to search, Mail, Amazon, Dropbox, File Explorer, Chrome, Word, System tray: ENG, 10:27, 2021/01/28

Leave a Reply

Your email address will not be published.

Comment

Good Day,

F Links wish to lodge a prospecting right on the farms [Ramonsdrift](#) and [Hom](#) which is in close proximity of [Goodhouse](#). Consultation need to conducted with the ward councillor (Ward 30 and those affected communities. Kindly forward contact details of the councillor for ward 3 to the enquirer M A Goliath

Name

Malcolm Goliath

Email

goliathmalcolm@yahoo.com

Website

Post Comment



Message sent To Wessa

Here's a copy of your message

To se@.....co.za

From Me (goliathmalcolm@yahoo.com) replies will be sent here

Subject Prospecting Right Application F Links

Message A visitor to www.hotfrog.co.za has submitted the following enquiry via your business listing page.

F Links have applied for a Prospecting Right in the Namaqualand Area on the farms Ramonsdrift and Hom. Your organization has been identified as an interested and Affected party and therefore need to be consulted with. Kindly forward contact details of an Official that can be consulted with.

Malcolm Goliath
0824523693

Regards,

goliathmalcolm@yahoo.com


Final Draft Reports submitted 28 January 2021

Birdlife South Africa


☰ ← Reply ← Reply all → Forward 📁 Archive 🗑 Delete 🚩 Set flag ⋮

All ▾

📎 07:10

MG Malcolm Goliath <goliathmalcolm@yahoo.com> 

To: info@birdlife.org.za

 FIRST SCOPING RERORT Draft F...
3,31 MB

The Manager
Birdlife South Africa

Sir/Madam

F Links wish to apply for a prospecting right for the farms Ramonsdrift and Hom situated in the Namakhoi Municipal area.

As an Interested and Affected Party kindly make input, if any, on the First Scoping Report hereto attached.

M A Golith

08245236935

Sent from [Mail](#) for Windows 10

📎 19:00

📎 18:56

📎 09:17

📎 08:39

📎 08:08

Format **Insert** Draw Options Discard Send

Files Table Pictures Link Emoji

From: goliathmalcolm@yahoo.com

To: info@birdlife.org.za; Cc & Bcc

Prospecting Right Application F C Links

Attachments

Draft... 3,41 MB FINAL DRAFT SCOPING... 3,48 MB

Good day,

Herewith kindly find attached the Final Draft Scoping Report and Draft EIA and EMPR for the F C Links Prospecting Right application for your input.

DMRE Reference : NC 30/5/1/1/2/12853

Kind regards

Malcolm Goliath

Sent from [Mail](#) for Windows 10

Final Draft Reports submitted 28 January 2021

STEINKOPF BRONNESENTRUM / RESOURCE CENTRE

The screenshot shows a web browser window displaying a Yahoo! Mail inbox. The browser's address bar shows the URL <https://mail.yahoo.com/d/folders/2/messages/19813>. The page header includes the Yahoo! Mail logo and a search bar. The left sidebar contains navigation options such as 'Compose', 'Inbox', 'Unread', 'Starred', 'Drafts', 'Sent', 'Archive', 'Spam', 'Trash', 'Less', 'Views', 'Photos', 'Documents', 'Subscriptions', 'Groceries', 'Deals', 'Receipts', 'Travel', 'Folders', 'New Folder', and 'Nico'. The main content area displays an email titled 'Prospecting Right Application F Links' from Malcolm Goliath to Steinkopf BSEN, dated Fri, Jan 15 at 9:27 AM. The email body contains the following text: 'The Manager Steinkopf Bronnesentrum / Resource Centre. Dear Sir / Madam: F links intend to apply for a Prospecting Right on the farms Ramonsdrift and Horn in the Goodhouse area. Details and plans of the prospecting activities can be found in the attached First Scoping Report. Kindly make input to the First Scoping Report attached hereto. Regards Malcolm Goliath 0824523803'. An attached PDF file named 'FIRST SCOPR...pdf' is visible. Below the email content are options to 'Reply, Reply All or Forward'. On the right side of the page, there is a WorldRemit advertisement with the text 'Send money with us. We're open 24/7.' and a 'Check our rates' button. The Windows taskbar at the bottom shows the search bar, system tray, and the date/time '07:27 2021/01/15'.

(1 unread) - goliathmalcolm@ya x +

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Prospecting Right application F C Links Yahoo/Sent

Malcolm Goliath <goliathmalcolm@yahoo.com>
To: steinkopf.bsen@gmail.com Thu, Jan 28 at 10:17 AM

Steinkopf Sentrum
The Manager
Dear Interested and Affected Party,
Herewith kindly find attached the final draft Scoping report and draft EIA and EMPR for your input. The EIA and EMPR has a 30 day inout period.
Reagrds
Malcolm Goliath
0824523693

Draft 5_and_...pdf 3.4MB
FINAL DRAF...pdf 3.5MB

Reply, Reply All or Forward

https://mail.yahoo.com/d/folders/2/messages/20105

Type here to search

10:18 2021/01/28

APPENDIX F
CONSULTATIONS

Councilor van Wyk



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL IMPACT 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: FELICITY CECELIA LINKS
TEL NO: 0844487008
FAX NO: 0844487008
CONTACT PERSON: FELICITY CECELIA LINKS
POSTAL ADDRESS: No. 07 Pienaar Street
Newpark, Kimberley, 8300
PHYSICAL ADDRESS: No. 07 Lavender Lane
Newpark, Kimberley, 8300
EMAIL ADDRESS: flinks3@gmail.com
FILE REFERENCE NUMBER SAMRAD: NC 30/5/11/1/2/12835PR

[Handwritten signature] Wyl 5. Kloosterhof

William Sonnenberg
076 945 3898
09/02/2021



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

FCL

SCOPING REPORT

NAME OF APPLICANT:	FELICITY CECELIA LINKS
TEL NO:	0844487008
FAX NO:	0844487008
CONTACT PERSON:	FELICITY CECELIA LINKS
POSTAL ADDRESS:	No. 07 Pienaar Street Newpark, Kimberley, 8300
PHYSICAL ADDRESS:	No. 07 Lavender Lane Newpark, Kimberley, 8300
EMAIL ADDRESS:	flinks3@gmail.com
FILE REFERENCE NUMBER SAMRAD:	NC 30/5/1/1/2/12835 PR



mineral resources

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Mineral Resources
REPUBLIC OF SOUTH AFRICA

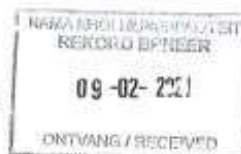
**ENVIRONMENTAL IMPACT ASSESSMENT REPORT
And
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

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).

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TEL NO: 0844487008
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PHYSICAL ADDRESS: No. 07 Lavender Lane
Newpark, Kimberley, 8300
EMAIL ADDRESS: flinks3@gmail.com
FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/1/2/12835PR

1 | Page

> Prins





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

LAND CLAIMS ENQUIRY

- **Potion 2 of the farm Kafir Krans 379, Magisterial District of Hay in the Northern Cape Province.**
- **Portion 4 of the farm Zeekoeneus 357, Magisterial District of Hay in the Northern Cape Province.**
- **Portion 1 of Kransfontein 24, Magisterial District of Hay in the Northern Cape Province.**
- **Portion 7 of the farm Kapstewel, Magisterial District of Hay in the Northern Cape Province.**
- **Portion 68 (A Portion of Portion 2) of the farm Bultfontein no. 80, Magisterial district of Kimberley in the Northern Cape Province.**
- **Farms Ramons Drift 24 and Hom 25, Magisterial District of Namaqualand in the Northern Cape Province.**

We refer to your letter received: **30 August 2022**

We confirm that as at the date of this letter that no land claim appears on our database in respect of the Properties 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



Ms. M. Du Toit
Chief Director: Land Restitution Support-Northern Cape

Date: 30/08/2022

APPENDIX G: ENVIRONMENTAL AWARENESS PLAN

1. Introduction

Legislation requires that an prospecting/Prospecting company who prepares an environmental management program must develop an environmental awareness plan describing the manner in which the company intends to inform his or her employees of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. In recognition of the need to protect our environment, environmental management should not only be seen as a legal obligation but also as a moral obligation.

1.1. The Environmental Awareness Plan (EAP)

The EAP forms part of the EMPr and is intended to create the required awareness and culture with personnel and contractors/service providers on environmental safety and health issues associated with the prospecting activities.

1.2. The applicant's policy on environmental awareness

This Environmental Awareness Plan (EAP) will serve as the basis for the induction of all new employees (as well as contractors pending the nature of their work on site) on matters as described herein and read in conjunction with the EMPr. The Plan will also be used to hone awareness of all employees on a continuous basis. Specific environmental awareness performance criteria will also form part of the job descriptions of employees, to ensure diligence and full responsibility at all levels of the organisational work force.

1.3. Fostering environmental awareness

General environmental awareness will be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout its duration. This will ensure that environmental accidents are minimized and environmental compliance maximized.

Environmental awareness will be fostered in the following manner:

- a) Induction course for all workers on site, before commencing work on site.
- b) Refresher courses as and when required
- c) Daily toolbox talks at the start of each day with all workers coming on site, where workers can be alerted to particular environmental concerns associated with their tasks for that day or the area/habitat in which they are working.
- d) Taking part in national and international environmental campaigns like National Marine Week, National harbour day, National Wetlands day exacta.

Displaying of information posters and other environmental awareness material in the general assembly points.

1.4. Training and environmental awareness

The company accepts that environmental awareness training is critical for the workforce to understand how they can play a role in achieving the objectives specified in the EMPr and ensure that the actions specified in the EMPr are implemented effectively and efficiently. It is vital that all personnel are adequately trained to perform their designated tasks to an acceptable standard.

2. The environmental awareness training course

All employees should attend the course, regardless of position, status or level of responsibility. With a background of basic environmental awareness and an understanding of basic environmental issues and sensitivities, personnel may be motivated and empowered to do their share in helping to maintain the integrity of the environment on the prospecting site through environmental impact management.

The goal of this course is therefore to enable a shared understanding and common vision of the environment, the impact of a prospecting operation on the environment (and why this is important) and the role of prospecting personnel in terms of environmental management and compliance.

The induction course will compose of the following steps:

- The first step will include background discussion of the environment concept: of what it comprises and how we interact with it.
- The second step will be a description of the components and phases of the specific Prospecting operation.
- The third step will be a general account of how the Prospecting operation and its associated activities can affect the environment, giving rise to what we call Environmental Impacts.
- The fourth and most important step will be a discussion of what staff can do in order to help prevent the negative environmental impacts from degrading our environment. This is known as Environmental Impact Management.

3. Course content

The following can be seen as the source of content as it will be building on as specific needs arises and was supplemented with the handout of reading material and extracts of the EMPr on which the course will be based.

3.1. The environment

The environment consists essentially of the living environment, the non-living environment and the man-made environment. The living environment consists of our plant and animal resources. The non-living environment includes the soil, water and geological resources. The man-made environment comprises our infrastructure, social, cultural and archaeological resources.

These environments depend on one another, and man depends on them all for his survival. Damage to one will be felt by so we must fry to protect the as well as their interactions with one another as they occur in nature.

When undertaking a Prospecting operation or any other form of development this concept must be kept in mind. Development must be implemented in such a way that we benefit today without compromising the ability of future generations to benefit as well. Employees should understand this concept of sustainability and sustainable development.

3.2. Description of the components and phases of the operation

The project description should be explained as part of induction together with the main components or activities that can affect the environment, giving rise to what we call environmental impacts. The Prospecting operation consists of a number of different components

3.3. Description of Environmental Impacts

A general account of how the Prospecting operation and associated activities can affect the environment must be explained. This is basically a description of concept of environmental impacts.

a) What is an Environmental Impact?

An environmental impact is the result, either good or bad, of man's actions on the natural environment This results in one or many changes in the environment may also affect the availability of resources and the environment's capacity to function.

Impacts can occur either as a result of:

- The use of a resource;
- Or the pollution of a resource.

In addition, impacts can be categorised as the following:

- Foreseen, such as the necessary clearing of the vegetation before Prospecting begins, or Unforeseen, such as the flooding of an area following heavy rains;
-

- **Avoidable**, such as the unnecessary spillage of diesel during refuelling- or **Unavoidable**, such as the disturbance created during drilling; **Simple**- such as litter untidying the prospecting site, or **Cumulative** which is a collective impact from different existing activities.

a) Environmental Impacts

Typical environmental impacts anticipated on a Prospecting site include the following:

The loss of plants; The loss of animals; Soil pollution; Dust liberation; Soil compaction and erosion; and Water pollution;

b) Causes of environmental impacts

These environmental are caused primarily by inadequate planning & not adhering to the EMPr Specifications'.

- The inadequate planning & preparation of the Prospecting site;
- The uncontrolled expansion of the Prospecting site footprint;
- The uncontrolled activity of Prospecting staff;
- The injudicious removal / disturbance of vegetation and habitat;
- The unnecessary loss of soil;
- Uncontrolled vehicular movement & circulation;
- The haphazard storage of vehicles, equipment and material;
- The uncontrolled servicing, repair and refuelling of vehicles;
- Unclear policy on solid waste management;
- Unclear policy on waste water;
- The uninformed use, storage and disposal of hazardous material;
- The erosive power of storm water and runoff;
- Unintentional fires;

3.4. Description of Environmental Impacts Mitigation

The fourth and most important step of an induction course will be a discussion of what staff can do in order to help prevent the negative environmental impacts from degrading their environment. This is known as Environmental Impact Management and is also described in the Environmental Management Programme. The course discussion should also include general environmental code of conduct practices such as:

Impact management: Prospecting site establishment (general):

- Do not cross any site fences;

- Do not walk, drive or store material in rehabilitating areas;
- Report any access into fenced off areas to the foreman environmental manager;
- Use only areas designated for certain construction activities;
- Do not access any stream or water body without permission;
- Report any headstones, graves or human remains you may find to the foreman environmental manager;

Impact management: Construction phase (general):

- Only eat, cook, sleep and recreate in the areas designated on site;
- Do not bathe anywhere except in the designated areas on site;
- Always use the toilet facilities provided;
- Only use the water provided on site- do not collect water from or dispose water into a natural water course;
- Always make use of the specified Prospecting site safety measures;
- Do not hunt, kill or injure any animals anywhere on site;
- Inform the foreman environmental of any dangerous or problem
- Do not leave any food or rubbish where scavengers can get at it.

Impact management: Health and safety (general):

- Always use the toilet & hand washing facilities provided.
- Only use the water provided on site - do not collect water from or dispose water into a natural water course.
- Make use of the specified protective gear for noisy and dusty conditions.
- Always wear proper protective head and foot gear while on site.
- Know where to find a list of emergency numbers in the event of one.
- Report accidents, injuries and unsafe site conditions to the Safety Officer.

Impact management: Vegetation clearing (general):

- Do not damage, destroy or remove any significant tree that has been marked:
- No firewood may be harvested without permission;
- Newly planted trees may not be disturbed in any way;
- Do not excavate beneath the crown of any tree that has been marked;
- No conserved tree may be used to support or hang anything in;
- Report to the foreman environmental manager any damage to any significant tree that has been marked.

Impact management: Top Soil removal and storage (general):

- Only excavate soil, gravel, rock etc. from designated areas;
- Stockpile soil only as instructed and at the time it is instructed;
- Do not make new stockpiles without permission;
- Do not use soil or remove soil from any stockpile without permission;
- Do not walk, drive or store any equipment, machinery or material on any stockpile.

Impact management: Access and transport (general):

- Only drive on designated roads and tracks;
- Move obstacles out of the way rather than drive around them;
- Only cross drainage lines at designated points;
- Always drive within the specified speed limit.

Impact management: Storage of vehicles, equipment and material (general):

- Do not leave machinery and equipment standing around if not in use;
- Only park vehicles in designated areas;
- Do not park heavy vehicles or store equipment under or near trees
- Do not store machinery, vehicles or materials in undisturbed or rehabilitating areas.

Impact management Servicing, repair and refuelling of vehicles (general).

- Only service machinery and vehicles in designated areas;
- Regularly check your vehicle for fuel and oil leaks;
- Inform the foreman environmental manager of leaking vehicles and machinery so that he can schedule repairs;
- Only refuel by means of a pump and on the bund created for that purpose;
- Immediately clean any accidental fuel and oil spills - do not hose spills into the natural environment;
- Dispose of contaminated soil as hazardous waste in the correct location on site.

Impact management: Solid waste management (general):

- Do not litter - make use of refuse bins provided;
- Concrete may only be mixed in designated areas and not directly on the ground;
- Do not hose spills into the natural environment - inform the foreman environmental manager of spills you are unable to clean yourself;
- Dispose of construction rubble only in specified storage areas - if in doubt, ask;
- Do not bury, hide or burn any waste of any nature;
- Inform the foreman of any illegal litter or dumping site that you encounter.
- Impact management: Waste water management (general):
- Do not use any natural water course to wash machinery, vehicles or equipment;

- Only wash machinery, vehicles or equipment in designated areas;
- Conserve water and report any leaks and overflow to the foreman,

Impact management: Management of hazardous material (General):

- Make sure that you know how to handle all hazardous substances;
- Do not access stores for hazardous substances without permission;
- Immediately clean any minor accidental spills and leaks;
- Do not hose any leaks or spills into the natural environment;
- Dispose of all hazardous waste in specified storage areas - if in doubt, ask;
- Immediately report any major leaks and spills to the foreman environmental manager.

Impact management: Fire management (General)

- Do not make open fires except in permitted areas and at permitted times;
- Do not leave any fires unattended. Extinguish these before you leave the area;
- All cooking is to be done on gas / electric stoves and only in the areas provided;
- Ensure that you know where firefighting equipment is located.

APPENDIX F1:SCREENING TOOL A

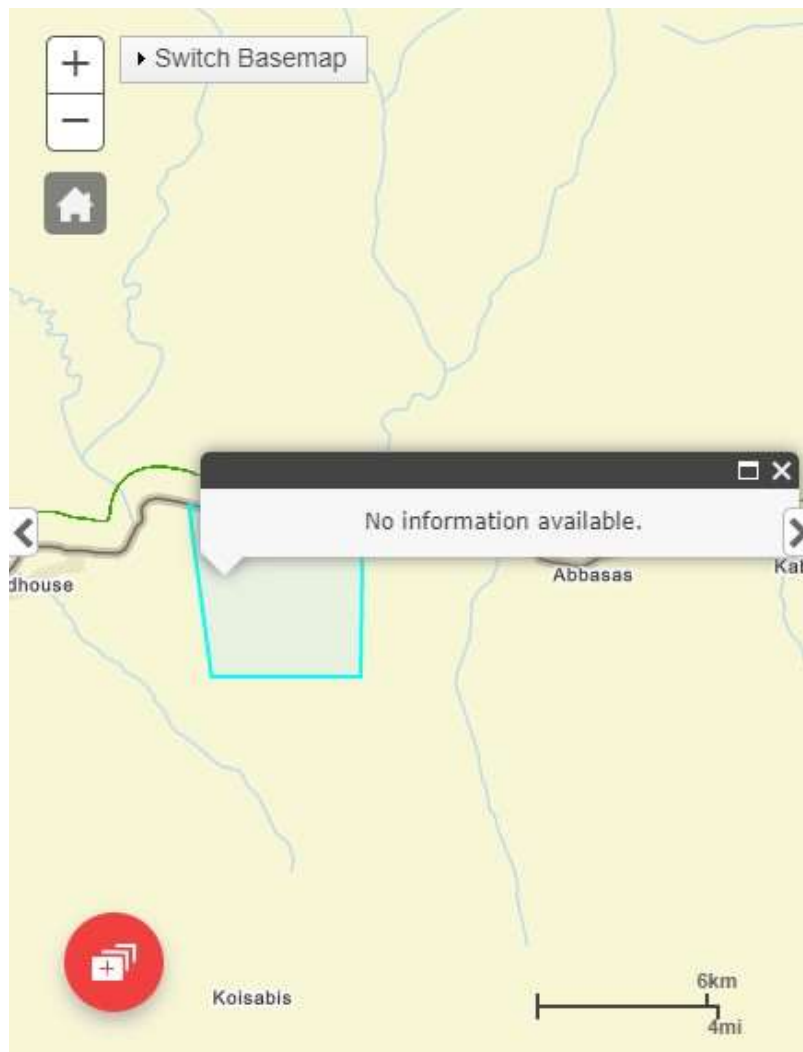
MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity



Identify Site [Get more info...](#)

Search Select Draw Coordinates Upload

Select an option below to search on ?

- Erf No. and Area Name
- SG 21 Digit Code
- Farm No. and Portion
- Farm Name
- Erf No. and Area Name (Agricultural Holding)
- Placename or Address
- Existing Application

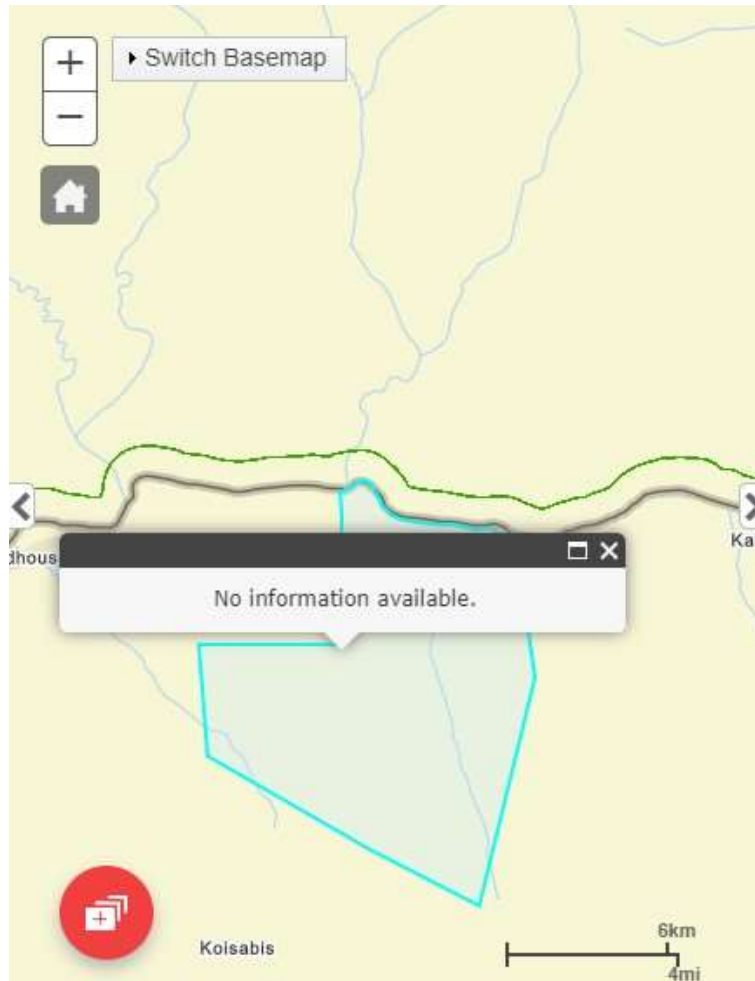
Farm Name:

Use current map extent

Results(Click to flash):

1 features have been found

- RAMONS DRIFT, 24, 0



Identify Site [Get more info...](#)

Search Select Draw Coordinates Upload

Select an option below to search on ?

- Erf No. and Area Name
- SG 21 Digit Code
- Farm No. and Portion
- Farm Name
- Erf No. and Area Name (Agricultural Holding)
- Placename or Address
- Existing Application

Farm Name:

Use current map extent

Results(Click to flash):

596 features have been found

- HELENA'S HOME, 279, 5
- HET-HOM, 1485, 0
- HOM, 25, 0
- HOMAN'S RUST, 875, 0
- HOMANSVLEY, 110, 0
- HOMANSVLEY, 110, 1
- HOMANSVLEY, 110, 2

CURRICULUM VITAE

MALCOLM ANGUS GOLIATH

PERSONAL DETAILS

Surname	GOLIATH
Full Names	MALCOLM ANGUS
Nationality Identity Number	SOUTH AFRICAN 6412145037082
Home Address:	23 GOEDEHOOP AVENUE, ROYLDENE, KIMBERLEY, 8301
CONTACT DETAILS: CELLPHONE: E-MAIL:	0824523693 goliathmalcolm@yahoo.com

Qualifications

<i>QUALIFICATION</i>	<i>INSTITUTION</i>	<i>YEAR</i>
GRADE 12	WILLIAM PESCOD HIGH SCHOOL	1981
TRADE TEST:	BLASTING TICKETS	
COLLEGE/ DIPLOMA:		
UNIVERSITY:LSTD(SCIENCE)	UNIVERSITY OF THE WESTERN CAPE	1984
TECHNIKON		
NATIONAL DIP (METAL MINING)	WITWATERSRAND TECHNIKON	1994
NATIONAL HIGHER DIP (METAL MINING)		

Professional Qualifications

MINE MANAGERS CERTIFICATE OF COMPETENCY

EXPERIENCE RELATING TO THIS APPLICATION

COMPANY NAME	<i>BNL Nnake</i>
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EMPLOYMENT DATES	2015 to 2019
POSITION HELD	Consultant –Environmental Assessment Practitioner
RESPONSIBILITIES: Consult on: Mining: Health and Safety, Develop Business Plans Mining Permit, Prospecting Right and Mining Right Applications (DMR) <ul style="list-style-type: none"> • Lodge Environmental Authorisations • Compile Scoping, Environmental Impact Assessment Reports and Environmental Management Programme Reports Environmental Impact Assessment Reports and Environmental Management Programme Reports Compiled : Mynplaas 1120 Prospecting Right (Free State) Bucklands Mining Right (Northern Cape) Goodrock Hotazel Mining Right (Northern Cape) Tsweleng Mining Right (Northern Cape) Ventersville Prospecting Right (Northern Cape) Wynandsfontein Prospecting Right (Free State) Di Blesbokkantoer Prospecting Right (Free State) Longlands Prospecting Right Application x 2 (Northern Cape) Ormabex Prospecting Right (Northern Cape) Rietfontein 11 Prospecting Right (Northern Cape) Dorstfontein 10 Mining Permit (Northern Cape) Erf 42 Windsorton Mining Permit (Northern Cape) Erf 99 Windsorton Mining Permit (Northern Cape) Bethel Project Prospecting Right (Free State) Alexanderfontein Project prospecting Right (Northern Cape) Blaauwkrantz Groenwater Prospecting Right (Northern Cape) Caravan Park Mining Permit (Northern Cape) Drakenstein Manganese Project Prospecting Right (Northern Cape) Doornpan Manganese Project Prospecting Right (Northern Cape) Nek 106 Manganese Prospecting Right (Northern Cape) Rorichshoop Prospecting Right (Free State) Koegas Prospecting Right (Northern Cape) Fontejntjie1 Mining Permit (Northern Cape) Fontejntjie2 Mining Permit (Northern Cape)	
COMPANY NAME	GOLCOR (PTY)LTD
EMPLOYMENT DATES	2020- to DATE
POSITION HELD	Consultant –Environmental Assessment Practitioner
RESPONSIBILITIES: Wepex Section 102-PWP-Current	