

**BASIC ASSESSMENT REPORT
AND
ENVIRONMENTAL MANAGEMENT PROGRAMME**

2ND DRAFT WITH SPECIALIST STUDIES

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 AMMENDED)



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LIST OF ACRONYMS:

ACRONYM: DESCRIPTION:

AEL	Air Emissions License in terms of NEM: AQA
A&IPs	Affected and Interested Parties
BA	Basic Assessment (process or report)
BID	Background Information Documents
CARA	Conservation of Agricultural Resources Act (Act 43 of 1983) as amended
CBA	Critical Biodiversity Area
COP	Codes of Practice
DWS	Department of Water Affairs and Sanitation
EA	Environmental Authorisation in terms of NEMA
EAP	Environmental Assessment Practitioner
ECA	Environmental Conservation Act (Act 73 of 1989) as amended
EIA	Environmental Impact Assessment (process or report)
EIA Regs.	Environmental Impact Assessment Regulation published under NEMA
EIS	Ecological Importance and Sensitivity
EMF	Environmental Management Framework
ESA	Ecological Support Area
GDP	Gross Domestic Product
GIS	Geographical Information Systems
GN	General Notice (issued under an Act, providing notice or information)
GNR	General Notice Regulation (issued under an Act, providing instruction)
HA	Hectors
IAIA SA	International Association of Impact Assessment South Africa
IDP	Integrated Development Plan
IWUL	Integrated Water Use Licence
IWULA	Integrated Water Use Licence Application
IWWMP	Integrated Water and Waste Management Plan
LED	Local Economic Development
NAEIS	National Atmospheric Emissions Inventory System
NEA	National Energy Act, Act 34 of 2008
NEM: AQA	National Environmental Management: Air Quality Act (act 59 of 2008) as amended
NEM:BA	National Environmental Management: Biodiversity Act (Act 10 of 2004) as amended

NEM: PAA amended	National Environmental Management: Protected Areas Act (Act 57 of 2003)	as
NEM: PAA amended	National Environmental Management: Protected Areas Act (Act 57 of 2003)	as
NEM: WA	National Environmental Management: Waste Act (Act 39 of 2004) as	amended
NEMA	National Environmental Management Act (Act 107 of 1998) as amended	
NHRA	National Heritage Resources Act (Act No. 25 of 1999) as amended	
NPAES	National Protected Area Expansion Strategy	
NWA	National Water Act (Act 35 of 1998) as amended	
PES	Present Ecological State (usually followed by category A-F)	
PPP	Public Participation Process	
PSDF	Provincial Spatial Development Framework	
Rod	Record of Decision (for specific application)	
RWQO	Resource Water Quality Objectives	
SACNASP	South African Council for Natural Scientific Professions	
SAHRA	South African Heritage Resource Agency	
SAMRAD	South African Mineral Resources Administration System	
SANBI	South African National Biodiversity Institute	
SANS	South African National Standard (followed by standard number)	
SAWIS	South African Waste Information System	
SDP	Spatial Development Plan	
SEMA	Specific Environmental Management Acts	
SOP	Standard Operating Procedure	
SPLUMA	Spatial Planning and Land Use Management Act (Act No.16 of 2013)	
StatsSA	Statistics South Africa	
WMA	Water Management Area	
WML	Waste Management Licence in terms of NEM: WA	
WUL	Water Use Licence	

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This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such parties rely on the report at their own risk

BIOMENTAL AS AN INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER

Biomental Services (Pty) Ltd is an environmental consultant that provides consultation services on various range of environmental aspects in mining, construction, renewable energy and agricultural sector. Through strategic partnerships we offer business sustainability solutions to our client. We help clients manage environmental impacts, and move forward in their business with the assurance they need. We are full-service Environmental Management Company that partner with clients to offer independent services and specialized business solutions that improves quality, safety and productivity, reduce risk and facilitate more sustainable and environmentally friendly operations.

Biomental Services has grown apace with the increased market for environmental advisory services in South Africa, our principles area of expertise lies in assessing the risk and impacts of the development process on the natural, social and economic environment through, among other instruments, the

environmental impact assessment (EIA) process. We believe in offering these services, we contribute meaningfully towards sustainable development.

We adopt a scientific approach to our studies, underpinned by an informed and holistic view of the environment and a pragmatic approach to sustainable development. This results in deliverables that are robust, defensible and credible. This is important for both the development and EIA processes, and as a result, the outputs of our studies demonstrate objectivity, sincerity and professionalism. We believe that a balance between development and environmental protection can be achieved by skilful and careful planning and that our outputs reflect these. Our experience in mining and construction advisory services have contributed to deep understanding of the environment and social challenges associated with the establishing and operation of facilities and infrastructure in the emerging market.

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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 and Environmental Authorization 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 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 application.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorization 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 Authorization 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 gathered to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation the applicant.

2. OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

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

- (a) Determine the policy and legislative content within which the proposed activity is located and how the activity complies with the responds to the place and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives; describe the need and desirability of the proposed alternatives,
- (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 aspect of the environment
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
 - (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) the degree to which these impacts –
 - (aa) can be reversed
 - (bb) may cause irreplaceable loss of resources; and (cc) can be managed, avoided or mitigated;

- (e) identify the most ideal location for the activity within the preferred site based on the lowest level of the environmental sensitivity identified during the assessment
- (f) identify, assess, and rank the impacts the activity will impose on the preferred location through life of the activity
- (g) identify suitable measures to manage, avoid or mitigate identified impacts; and
- (h) identify residual risks that need to be manage and monitor

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PART A

SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

1. Contact person and correspondence address

1.1 Details:

1.1.1 Details of EAP

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1.2 Expertise of the EAP

1.2.1 Qualifications of EAP

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Bachelor of Environmental Science (University of Venda).

Nhlamulo Election Mahori

Bachelor of Environmental Science (University of Venda)

Honours Environmental Science (University of Venda)

Professional Registration: EAPASA, SACNASP

Fortunate Ngubeni

Bachelor of Arts in Environmental Management (UNISA)

Baccalaureus Artium in Geography (University of Johannesburg)

Rito Gabeni

Bachelor of Science in Environmental Science (University of Kwazulu Natal)

1.2.2 Summary of the EAP's past experience.

See Appendix 2

2. Location of the overall Activity

Farm Name	Tweed 362 IL
Application area (Ha)	5064 ha.
Magisterial district:	Kuruman
Distance and direction from nearest town	approximately 114 km North of Kuruman,
21-digit Surveyor General Code for each farm portion	SG:T0IL00000000036200000

3. Locality map

(Show nearest town, scale not smaller than 1:250 000)

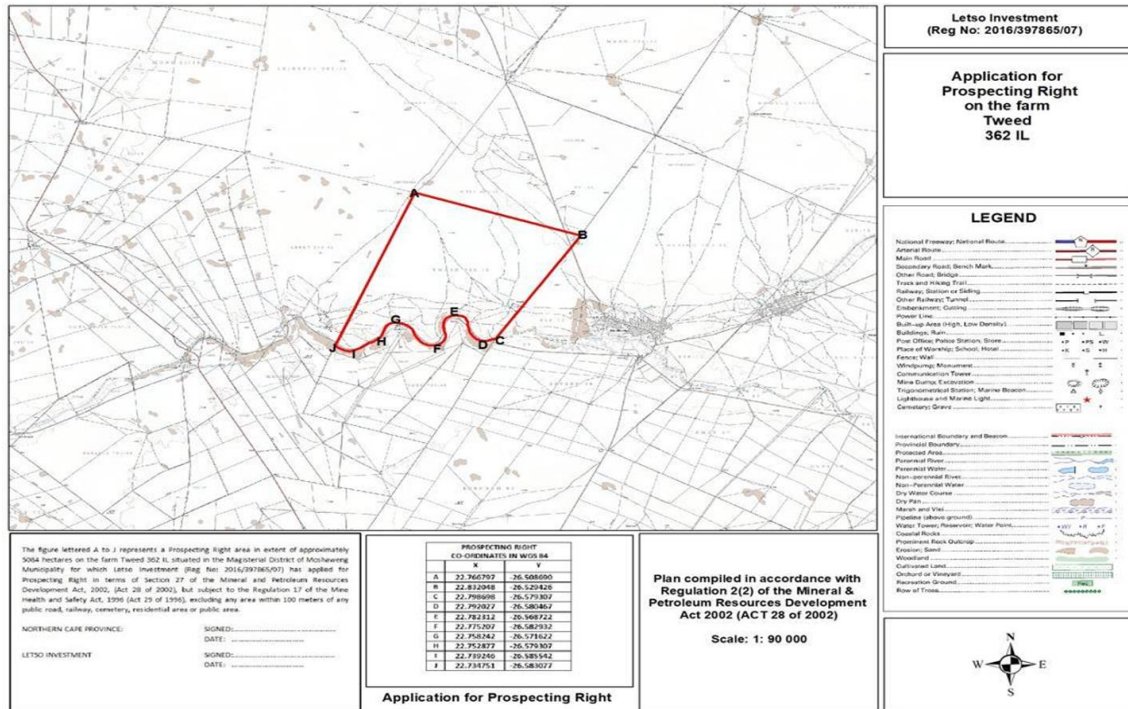


Fig 3: locality Map

4. Description of the scope of the proposed overall activity

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

The applicant Letso Investment (Pty)Ltd intends to do prospecting for manganese and iron ore on farm Tweed 362 IL. The prospecting area extent is 5064 ha in size and situated 114 km north west of Kuruman, in the Northern Cape.

This Prospecting Work Programme/Prospecting Plan is comprised of various phases ranging from existing historical geological information to the Bankable feasibility study, depending on the economic potential of the Mineral or commodity to be prospected.

The prospecting project will be undertaken using Non-invasive and invasive techniques prolonging over the period of 52 months (5 years). Prospecting activity will be implemented in three (3) phases over the prospecting periods.

The reverse circulation and core-drilling method will be used. The boreholes will be logged, and sampled where the mineralisation has been identified. Samples will be submitted for analyses to determine the metal content and physical characteristics. Each sample is halved, bagged and numbered in the field by the geologist and field assistants. The bagged samples are then sent to a laboratory for analyses and the other half stored for future test work. Planned number of diamond core boreholes to be drilled is 14 at approximately 100m deep. Upon completion all disturbed areas will be rehabilitated using suitable material. Rehabilitation will be recorded photographically.

a. Listed and specified activities

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablation)	ARIAL EXTENT OF THE ACTIVITY OR M ²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)

<p>facility, accommodation, equipment storage, sample storage, site office, access route etc ... etc ... etc</p> <p>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,</p>		Mark with an X where applicable or affected.	
The project involves prospecting activities for mineral deposits that exist within the application area	5064ha	X	Activity 20 of GN 327 of 2017
Site establishment (Ablution facility Camp sites)	2m2	X	Listing Notice 1, GN R327 of 2017; Activity 27
Drilling for prospecting purposes	The project will involve drilling of four (14) holes Trenches (2mX2mX2m) and 14 x 100 meters deep borehole. 500 m2	X	Listing Notice 1, GN R327 of 2017, 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 Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource [.] ; or [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)]

The decommissioning of any activity requiring a closure certificate in terms of Section 43 of the MPRDA	Rehabilitation of the disturbed areas. Closing of open holes Restoring the prospecting area to it former status	X	GN R327 of 2017 Listing Notice 1 Activity 22
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4.1 Description of the activities to be undertaken

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

Letso Investments (Pty) Ltd intends to prospect for manganese (Mn) and iron ore (Fe) within the application area. The prospecting area is approximately 5064 ha in size and is located approximately 114 km north-west of Kuruman town, in the Northern Cape Province of South Africa over farm Tweed 362 IL. The study area is within Joe Molorong Local Municipality of John Taolo Gaetsewe District Municipality.

It is envisaged that the prospecting activity will include geophysical surveys, drilling, logging, sampling, analyses, geological modelling and resource estimation over a phased period of 52 months. This application does not include bulk sampling and all data acquisition and reporting will be in accordance with the approved guidelines of the SAMREC.

Only a limited number of job opportunities will be available during the exploration phase and as far as possible only local labour and service providers will be employed by the applicant.

Drilling will be limited to areas where exploration identifies targets or where deposits are known to occur and grazing areas will not be disturbed unless required. Access and compensation agreements that would regulate the proposed activities will be concluded with the surface owners prior to commencing exploration.

The prospecting operation will be conducted utilising non-invasive activities which is ground (by foot) geophysical surveys including the following:

- Use of 4X4 vehicles using existing roads as far as practically possible.
- A drill camp will be set up on the site, however, location thereof will be on agreement with the Landowner/s. Camp rules will be stipulated in the access agreements.
- Clearing of vegetation will be avoided as far as practically possible and where required be limited to drill sites.
- Chemical ablation facilities will be set up at the camp and drill sites and will be provided and maintained.
- Re-fuelling will be done using a Bowser Trailer.
- Only bio-degradable drilling fluids will be used.
- Water will be required per day and this will be trucked into site (when necessary).
- All drill and camp sites will be clearly demarcated and enclosed.
- Site rehabilitation will be done in accordance with best practice industry norms.
- All activities will be under the supervision of a permanent project geologist and drill site manager.

Description of non-invasive activities

A desktop analysis using literature review, geological mapping; geophysical survey and satellite imagery, survey and pegging and geological modelling have been cited in the prospecting work programme as the activities constituting the non-invasive activities to be undertaken.

Resource estimation

The borehole, geophysical survey and analytical data/results will be captured into an electronic database. A geological model is then developed that forms the basis for the resource estimate. The purpose of the resource estimate is to obtain an indication of the tonnage and quality of a potential base metal deposit.

Description of invasive activities:

PHASE 1 (12 MONTHS)

A qualified geologist will be appointed to oversee and undertake the prospecting activity from inception to completion. This will begin with the collecting and evaluation of all available geological information (i.e., previous exploration reports, geophysical and remote sensing surveys). This desktop study will be followed by reconnaissance mapping. This is expected to complete within the period of four months. Detailed geological mapping is done to understand the distribution of the different lithologies in the area, and to understand the relationship between them and to identify possible economically viable units. Geological mapping and post-field work map compilation is expected to take six months to complete. At the end of this phase, geological and geophysical maps will be produced and targets for detailed follow-up will be selected. Two months will be required for geochemical data interpretation and report compilation.

PHASE TWO (36 MONTHS)

Depending on outcomes of Phase 1, trenching (4 trenches with 2m long x 2m depth x 2m wide) will be conducted to expose the bedrock and to take samples in areas where there are no outcrops. To achieve this phase, the geologist will provide geologists, works foreman, labourers, drilling contractors, laboratory technicians required. About 300 Samples collected from this phase will be sent to the laboratory for analysis. This will give an indication of the continuity or discontinuity of mineralization in areas with no or little outcrops and provide a better overall understanding of the project. This phase is expected to last for twelve months.

When the analyses are done, percussion drilling will be conducted to identify possible high-grade zones, the lateral and vertical extent of anomalies. Percussion drilling will mainly concentrate on favourable sites identified in the previous phases. About 8 holes at 50 m depth of percussion drilling will be done and over 250 samples will be collected for analyses. It is expected that this stage will be completed in twelve months. Depending on the results of percussion drilling, closely spaced diamond drilling which aims to complete drill holes between existing holes will be conducted. About 8 holes at 50 m depth will be conducted with 250 samples collected for metallurgical, geochemical, and geotechnical analyses for ore body modelling. This stage will be completed in twelve months.

PHASE 3 (12 MONTHS)

The final phase of prospecting (pre-feasibility studies) will involve detailed resource and reserve estimations, engineering, and economic studies. All documents (i.e. Environmental Impact Assessment Report and, social and labour plan) necessary for mining right application will be compiled. It is expected that this stage will require twelve months to complete. Appointed geologist will also be responsible for providing the expertise needed to undertake this phase and these expertise ranges from environmental specialists, geologists, mine economics, engineers, accountants, and consultants.

Summary of Prospecting Plan /Prospecting Work Programme

- Literature surveys
- Desktop studies

- Geophysical studies
- Research and target identification
- Invasive work such as trenching and drilling
- Sampling work
- Laboratory work
- Analytical and modelling work
- Infill work
- Testing to be carried out
- EMP and EIA for Mining Right Application
- Pre-feasibility studies
- Investment decision making and application for a Mining Right

Clearance of vegetation will be kept to an absolute minimum for the drill pad, keeping disturbance to the native vegetation to an absolute minimum. No topsoil will be removed. After each drill hole is complete, logged and sampled, the borehole collar is surveyed by an independent surveyor using a high-accuracy differential GPS. Thereafter the drill sumps will be filled in, the drill area rehabilitated and photographed according to the procedures. The rehabilitation process will be closely monitored to ensure that standards are not compromised. A drill site is only considered rehabilitated when the project geologist has signed a standard drill pad rehabilitation.

The Construction phases

As this activity mainly entails prospecting, the construction phase is not relevant. A small drill camp will be set up on site and Enviro-loo ablution facilities placed in close proximity. The drill camp will be located at an environmentally secure position/s agreed upon by the applicant, the landowner/s and the Environmental Control Officer (ECO) and cannot be determined at this stage of the process. No permanent structures will be erected.

The Prospecting (Operational) phase

In terms of this application, non-invasive prospecting activities will be carried out by the applicant within the prospecting study area once the right has been approved. The identified target areas shall be visited by means of 4x4 vehicles along existing farm access as far as practically possible. Dense/intact land parcels would be accessed by foot. During this phase, it is anticipated that there will be limited site clearance. The equipment which to be used are 4x4 vehicles in the initial phase.

During the invasive drilling stage, a drilling rig and TLB will be used. The invasive prospecting phase of the project will involve the actual drilling, survey and sampling. Drilling and sampling will increase noise and can create dust. Employees operating the drilling and sampling equipment will use personal protective equipment (PPE) such as ear plugs to minimise exposure to the noise from machinery, dust masks, hard hats, safety boots, etc. Working hours (drilling and sampling) will be limited to between 6am and 6pm. A total of approximately 14 boreholes will be drilled as part of Phase 2 (thus per phase) to a depth of approximately 100m. All activities will be done in accordance with industry best practice and in compliance with the Mine Health and Safety Act.

Decommission/Rehabilitation phase

Decommissioning phase involve rehabilitation of the area to the state in which it was prior to prospecting and disturbance. All equipment will be removed from the site. All the stockpiled soil will be backfilled into the sumps and boreholes. Any rock cores and any ablution facilities that were erected will be removed. Rehabilitation measures are described in more detail later in this report.

5. 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	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT (E.g. In terms of the National Water Act a Water Use License has / has not been applied for)
Constitution of the Republic of South Africa, 1996	Chapter 2 of the Constitution includes an environmental right (section 24.) Obligation to ensure that the proposed development is ecologically sustainable while demonstrating economic and social development	No authorization required but links with NEMA.
National Environmental Management Act, (Act 107 of 1998); with subsequent amendments. Environmental Impact Assessment Regulations (2014)	The activity triggers a listed activity as set out by the Act as well as GNR 983 and GNR 985.	An Environmental Authorization has been applied for.

National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004)	The proposed development must conserve endangered ecosystems and protect and promote biodiversity; Must assess the impacts of the proposed development on endangered ecosystems; No protected species may be removed or damaged without a permit; An invasive species monitoring, control and eradication plan for land/activities under their control should be developed, as part of their environmental plans in accordance with section 11 of NEMA.	No Authorisation required. Should red-listed species be found a safe buffer will be placed around these and it will not be disturbed.
National Environmental Management: Air Quality Act (Act 39 of 2004) with subsequent amendments and Regulations	Moving vehicles and drilling may increase dust – with adequate mitigation measures this will not be significant.	No Authorisation required.
Mine Health and Safety Act ,1996 (No. 29 of 1996	The mine Health and Safety Act, 1996 (No, 29 of 1996) provides for the protection of the health and safety of employees and other persons at mines and, for that purpose promote culture of health and safety	The mine Health and Safety Act, 1996 (No, 29 of 1996) provides for the protection of the health and safety of employees and other persons at mines and, for that purpose promote culture of health and safety
Northern Cape Nature Conservation (Act No. 9 of 2009)	During the Site establishment, there may be a clearance of vegetation which includes trees	All activities from the site establishment of the prospecting area must comply to the act, where protected trees will be cut an application must be lodged with the DFFE
Conservation of Agricultural Resources Act, 1983	The overall Prospecting Activities	The project should promote the conservation of soil, water and vegetation
National Heritage Resources Act, (Act 25 of 1999)	No person may alter or demolish any structure or part of a structure, which is older than 60 years or disturb any archaeological or paleontological site or grave older than 60 years without a permit issued by the relevant provincial heritage resources authority. No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter or deface archaeological or historically significant sites.	No Authorisation required at this stage. Should this become a requirement, the applicant will obtain the necessary permits prior to commencing with the activities.

National Water Act, (Act 36 of 1998)	Manage the use of water as well as runoff in such a manner that it has limited pollution impacts. Prevent the unauthorised use of water by abstraction and close proximity to drainage lines and waterbodies	Authorisation required an application is been lodged with Department of water and Sanitation (Kimberly)
National Forest Act (Act 84 of 1998)	If any protected trees in terms of this Act occur on site, the developer will require a license from DFFE to perform any of the above-listed activities.	If any protected tree is identified during the non-invasive phase a safe buffer will be placed around it and it will not be disturbed.
National Veld and Forest Fire Act 101 of 1998	To prevent and combat veldfires and mountain fires throughout the Republic	No Authorization required. If any fire risk and fire incident occur, measures will be undertaken to prevent or combat fire. This will also include measures being put in place during prospecting to prevent potential fire risk.
Occupational Health and Safety Act, (Act 85 of 1993)	To ensure H&S aspects are adhered to on site.	No Authorisation required
Guidelines 3 to 5 published to assist with interpretation of the EIA Regulations (2006) John Taolo Gaetsewe District Municipality, and Joe Morolong Local Municipality IDP and SDF	The prospecting area is situated within this Municipality and partially within the District Municipalities.	No Authorisation required
Section 34 of the Local Government: Municipal Systems Act, 2000 (ACT 32 of 2000)	The overall prospecting activities	Municipal System Act compels municipalities to draw up the IDP's as a singular inclusive and strategic development plan. In terms of section 26 of the MSA, A municipality produces an IDP every five year
National Development Plan 2030	The overall prospecting activities	The NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnership throughout society
Mucina, L. & Rutherford, M.C. (eds) 2006. The vegetation of South Africa, Lesotho and...	Spatial tools for Vegetation Types	No Authorisation required
South African National Landcover dataset (2011)	Spatial tools for land cover	No Authorisation required

National Freshwater Ecosystem Priority Areas (2011)	Spatial tools for Wetlands, Rivers and drainage areas.	No Authorisation required
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6. 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).

Need

The prospecting activities being applied for are required in order to investigate the presence of suitable mineralisation and, if so, whether this mineralisation can be economically and feasibly mined in future which, in turn, presents various socio-economic benefits to the region. The proposed prospecting activities are needed in order to determine the exact position, extent, grade and quality of manganese and iron ore. These minerals are of significant value and the mining thereof has the potential to contribute positively to the South African economy. The geological characteristics of the preferred location meet the prerequisites for concentration of these minerals.

Desirability

Mining as a whole is an important player in the South African economy. The industry contributes R8 for every R100 produced by the national economy. The mining industry of the province is of national and international importance. It contributed 28.9% to the GDP in 2002 and 27.6% in 2008. The Northern Cape produces approximately 37% of South Africa's diamond output, 44% of its zinc, 70% of its silver, 84% of its iron-ore, 93% of its lead and 99% of its manganese. Manganese was the star of 2017, with production of the metal rising by 32% (Mining: winners and losers of 2017 Statistics)

The Northern Cape mining value chain primarily constitutes exploration/prospecting, shaft set-up and mining. The Northern Cape Provincial Spatial Development Framework (PSDF, 2011) identifies significant societal challenges in terms of employment and poverty. According to the PSDF (2011) these issues can be alleviated and addressed through long-term sustainable economic growth and development. Opportunities for potential growth include mining and mineral processing.

The PSDF (2012) identifies the proposed land-use for the immediate area as extensive agriculture with extractive industrial uses to some extent. Although this application relates to prospecting, if approved and quality minerals are found during these phases, it may lead to mining in the future which may in turn contribute to economic growth. This development is thus in line with the PSDF.

In addition to the above, the medium- to long term fundamentals for base metals remain positive. The detailed geology of manganese and iron ore mineralization of the area is fairly well-known, the proposed prospecting and future mining of the proposed area presents significant opportunities for alleviating the scourge of poverty and unemployment in the area. Successful exploration may lead to the development of local mines and associated industries and be the catalyst for skills development and job creation in a generally impoverished area with very high levels of unemployment and poor economic development.

7. Motivation for the overall preferred site, activities and technology alternatives

The site has been selected for its potential geological features in terms of mineralisation based on extensive historical data for the area. No alternative site locations were therefore assessed.

The application area was selected following a desktop study applying base metal ore deposit models and using regional geological maps, geophysical data and historical reports – the area under application is underlain by the Transvaal Supergroup.

The applicant specialises in prospecting and mining and has partnered with exploration companies. The applicant is also committed to utilising the best technology currently available (thus no technology

alternatives will be considered) and has designed the preliminary layout plan in such a manner that negative impacts are minimised and positive impacts are maximised.

The entire site and any target areas that will be drilled are not in proximity to any sensitive environmental features within the prospecting study area, therefore, limiting the potential negative environmental impacts. It is furthermore noted that the requirements for additional invasive prospecting activities within the identified site will be limited to the drilling locations which constitutes a limited geographic space of the entire prospecting area.

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

NB!!! This section is about the determination of the specific site layout and the location of the infrastructure and the 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.

8.1 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 Preferred Property/Location Alternative:

The manganese and iron minerals are historically known to be found within the Kuruman belt which is associated with the Kalahari Group, Campbell Rand Sub-group and the Transvaal Supergroup. The Campbell Rand Sub-group contains fossilized remains of the oldest life forms on earth. The latter is overlain by thick units of banded iron formation belonging to the Asbestos Hills Subgroup. These formations are known for manganese and iron ore deposits. The application area was elected following a desktop study applying base metal ore deposit models and using regional geological maps, geophysical and historical data.

It should be noted that prospecting is a "locality bound" industry (it has to take place where the resources are) thus no alternative locations for prospecting can be assessed. However, alternative locations for infrastructural components of the project that are not locality bound can be considered. In this case however, the only infrastructural component of the proposed project is the location of the site camp and the access roads. This location will be dependent upon landowner negotiations and farm occupant and thus as a result cannot be determined prior to the prospecting being granted.

b) Preferred Activity Type

Since the core business of the project developer is prospecting, exploration and mining, the fundamental alternative of a development other than the proposed prospecting and associated infrastructure is therefore technically not feasible in this instance. For this reason, no fundamental alternative to prospecting has been considered in this assessment. A phased prospecting approach has been chosen as the preferred method in order to avoid unnecessary environmental impacts as well as to avoid unnecessary costs if, in the unlikely scenario, the prospecting results is not mineable. The

initial non-invasive prospecting may determine that no further prospecting is necessary and/or determine where invasive prospecting shall be concentrated. The following invasive prospecting phases (as discussed above) will determine the best position and method for the proposed drilling in such a way as to avoid unnecessary environmental impacts, social impacts and financial costs.

c) Preferred Design and Layout of the Activity

The preliminary layout and design make provision for the proposed drilling locations based on a desktop analysis of the area. The preliminary layout has been designed in such a manner to avoid any potential sensitive areas, to minimise access away from existing farm tracks, farmstead and to minimise impacts on existing agricultural activities. The exact access routes required will only be available once the final locations of the boreholes have been established and this can only be done once the geophysical survey has been completed during phase 1 of the prospecting phase. All final locations will be discussed with the relevant landowners and the client shall endeavour to accommodate them on the precise location of access tracks and holes within the area where practical.

d) Preferred Technology of the Activity

The applicant is committed to utilising the best technology currently available. A ground geological survey will be conducted as part of the initial non-invasive prospecting phase. The technology associated with this was chosen to provide the maximum detail regarding the geophysical characteristics of the targeted mineral hosts as well as to avoid any unnecessary costs and, more specifically, any unnecessary environmental or social impacts. The technology used in the invasive phase of the prospecting activity (i.e., diamond core drilling, core drilling) has been chosen to undertake the resource determination and confirmation in the most effective and cost-saving manner, while avoiding any unnecessary impacts on the biophysical and social environment.

e) Preferred Operational Aspects of the Activity

The preferred operational aspects involved in the non-invasive as well as the invasive phase of the prospecting have been chosen to limit any unnecessary costs and environmental or social impacts throughout the duration of the activity. The operational aspects will also provide employment opportunities to skilled and unskilled workers of various demographics and will contribute to employment generation in the province.

f) No-go' alternative

The no-go option assumes that the site remains as it is – i.e. no prospecting activities will take place. The proposed project area is geographically sparse, and largely consists of farms on sandy plains. The affected farmland itself does not seem to be included in any conservation corridor as outlined by available spatial however the general baseline environment is within the CBA. The area to be considered for the prospecting right application has been identified to occur approximately 114km north-western part of Kuruman town and 4km north-eastern part of Madibeng village. Agriculture is the largest economic sector of the municipality; the application area has farms where there is livestock and agriculture. It is assumed that the majority of the farmers in the project affected area have held their farms for many generations, and would therefore presumably have a strong cultural attachment and sense of place, especially since such farms are normally inherited and/or subdivided as part of such inheritance.

The no-option would thus mean that these activities carry on as per normal. Should the no-go option become the preferred option, it may have several negative impacts of high significance including the loss of potential employment associated with the prospecting activity as well as any future mining activities, the loss of potential mineral resources which could be sold or refined, and also an overall negative effect on the South African economy, as the mining industry contributes a significant portion of the GDP and forex.

8.2 Details of the Public Participation Process followed

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

This 1st Draft Basic Assessment Report served this purpose and has being published to Interested &Affected Parties, Stakeholders, Organs of States, On-profit Organisation, Traditional Council and general public. Notices of invitation for public participation, review and comments were sent out to the above-mentioned categories to make submission within 30 days of the notice. Public notices have been set out within the study area community/villages and also newspaper advert at khathu Gazette. All comments received and from I&AP, Stakeholders, Organs of State, Traditional Council and general public and EAP response has been encapsulated.

8.2.1 Summary of issues raised by I&AP

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

The 1st Draft BAR purpose was to give I&AP, stakeholder, organs of state and general public and opportunity to make comments and submission. All submissions and comments from I&AP have been included in the 2nd BAR. It must note that the purpose of the 2nd draft BAR with specialist studies is to allow all stakeholders to make additional submission, comments and review.

DRAFT

INTERESTED AND AFFECTED PARTIES List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted	DATE COMMENTS RECEIVED	ISSUES RAISED	EAP's RESPONSE TO ISSUES AS MANDATED BY THE APPLICANT	SECTION AND PARAGRAPH REFERENCE in this report where the issues and or response were incorporated
AFFECTED PARTIES	None	None	None	None
Lawful occupiers/s of the land	None	None	None	None
Landowners or lawful occupiers on adjacent properties	None	None	None	None
Municipal councilor	None	None	None	None
Municipality	None	None	None	None
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA))				

Department of Forestry, Fisheries and Environment	22 November 2022	1. The proponent must assess the site for the presence of protected trees [section 12 of the National Forests Act, Act No. 84 of 1998 (NFA)] and the potential risk and impact on such tree species. See GN 1935, Government Gazette No. 46094 of 25 March 2022 for the list of protected tree species. Species such as Vachellia erioloba, Vachellia haematoxylon and Boscia albitrunca are known to occur in the vicinity of the prospecting site.	An Ecological study has been undertaken and there is No species found in the study area listed in the 2009 Red Data Listing (RDL) nor has any threat status. No Orange Data species or species of conservation concern were observed during field investigations. See Appendix 4A: Ecological Study	Appendix 4A: Ecological Study (Section 4.1.2 Priority Floral Species)
		2. Section 15(1) of the NFA stated that no person may cut, disturb, damage or destroy any protected tree; or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, or any forest product derived from a protected tree, except under a licence granted by the Minister; or in terms of an exemption published by the Minister.	This section has been used as premise in the EMPr as pertains to Mitigation measure for the protection of Floral species	
		3. The prohibition on protected trees applies to all trees, alive and dead. It also applies to all size classes of the species listed as protected.	This has been noted. All prospecting personnel will undergo an environmental education and this aspect will be included. Moreover, the Inductions training will include this aspect.	
		4. Page 12 of the Draft Basic Assessment Report (BAR) stated the “prospecting area extent is 5 064 ha in size”, but page 13 stated	The prospecting area extent is 5064ha instead of 13920ha. The relevant section referred to has been amended.	2 nd DBAR (Section 4.1 Listed and specified activities)

		the application area is 13 920 ha. Please clarify.		
		5. On some of the maps, the study site is indicated as Farm Tweed 362 IL, but in the report the property name is indicated as Farm Tweed 262 IL. Which one is correct?	The Farm name is Tweed 362 IL instead of Tweed 262 IL. The farm name has been rectified on this report as highlighted.	2 ND DBAR&EMPr
		6. Under applicable legislation, no reference was made to the Northern Cape Nature Conservation Act, 2009 (Act no. 9 of 2009) (NCNCA). The NCNCA might be applicable due to potential impacts on common indigenous, provincially protected and specially protected fauna and flora. Permits may be required under the NCNCA during invasive prospecting activities.	The legislation referred to have been added or included as highlighted.	Section 5: Policy and Legislative Context
		7. Under applicable legislation, no reference was made to the National Veld and Forest Fire Act, 1998 (Act no. 101 of 1998), which outlines certain roles and responsibilities in terms of readiness for firefighting.	The legislation referred to have been added or included as highlighted. See section 5: Policy and Legislative Context	Section 5: Policy and Legislative Context
		8. Page 28, under the heading “terrestrial ecology”, the report stated the study site is in the Kathu Bushveld vegetation type, but on the same page under the heading “species composition”, a statement is made saying the site is in the	According to the Ecological study, the proposed development area is located within the SVk 11 and AZi 3 vegetation unit. The SVk 3 is known as the Molopo Bushveld and the AZi 3 is known as the Southern Kalahari Mekgacha vegetation unit.	See Appendix 4A: Ecological Study (Section 4.1.1 Vegetation of study area)

		Kuruman Bushveld vegetation type. Please clarify.		
		9. Page 28 of the report stated, “there are no CBAs within the prospecting area and the prospecting area has low terrestrial sensitivity however the surrounding area boundaries of the study area is classified as ESA of very high sensitivity.” Kindly provide the map showing the study site in relation to Critical Biodiversity Areas.	According to the Ecological Study” According to the data for protected areas, no portions fall within a protected area. “No CBA map has been developed given that the study area is not within a conservation or protected corridor.	See Appendix 4A:Ecological Study (section 4.1.3 Conservation status)
		10. Under mitigation measures, the report continuously refers to ‘mining’, yet the application is for prospecting. Please clarify.	The section in reference has been amended to refer as “prospecting” instead of “Mining)	Section 8.8 Possible mitigation measures that could be applied and the level of risk
		11. Page 54 refers to the former Department of Agriculture, Forestry and Fisheries. Kindly note it should read Department of Forestry, Fisheries and the Environment.	This has been noted. The department is mentioned as “Department of Forestry, Fishery and Environment “instead of “Department of Agriculture, Forestry and Fisheries”	Section 8.8 Possible mitigation measures that could be applied and the level of risk
		12. The DFFE is kindly requesting a .kml/.kmz of the study site.	Included in the report.	Appendix 3 of 2 nd DBAR&EMPr
		13. The applicant should provide maps illustrating the impact/footprint/layout of the proposed prospecting activities in relation to (but not restricted to): <ul style="list-style-type: none"> Associated vegetation types (as per Mucina & Rutherford, 2006). 	Included.	Appendix 3 of 2 nd DBAR&EMPr

		<ul style="list-style-type: none"> • Critical Biodiversity Areas (Northern Cape Critical Biodiversity Areas Map, 2016). • National Freshwater Ecosystem Priority Areas (rivers and wetlands) 		
		14. The above-mentioned is required for find-scale mapping to identify and avoid 'sensitive' areas on site.	Noted	Appendix 3 of 2nd DBAR&EMPr
		15. The DFFE supports the recommendation on page 48 that a Terrestrial Biodiversity Impact Assessment be conducted, but it should not be limited to a desktop study.	Fully Ecological Study has been conducted by EnviroMax Consulting (Pty)Ltd	See Appendix 4A
		16. The Department is kindly requesting a list of plant species that could potentially occur on site versus the species recorded and encountered on site during the fieldwork / assessment of terrestrial biodiversity impacts in a suitable season i.e., when bulbs are flowering after rains, preferably by a specialist with knowledge of local plant species.	See Appendix 4A: Ecological Study Report	. Refer to section 1.4 Flora identified during field investigations Refer to section 4.1.1 Vegetation of study area
		17. An electronic copy of the Specialist Terrestrial Biodiversity Impact Assessment (once available).	Both electronic and Hard Copies of BAR&EMPr and Specialist Studies will be made available and couriered to the department.	
		18. The screening tool identified eight (8) specialist assessments for inclusion in the assessment report.	The competent Authority have recommended only 2 specialists studied to be undertaken, namely; Ecological Study	

		It is not clear why only two specialist reports are recommended. No motivation was supplied for not including themes such as Aquatic Biodiversity with a very high sensitivity.	and Archaeological and Cultural Heritage Study. These studies have been conducted and have been appended on Appendix 4 of this report.	
Communities				
Hueningvlei Village				
Community Members	15/11/2023	1. We want to know what could be the reason the municipality is included in this report and its involvements in the project. Are you working with the Municipality?	The Local and District Municipality are stakeholders and must be consulted as stakeholders like any other organs of state whom we have consulted. We are not working with the municipality in a sense that they are directly involved in this application or the proposed project. However, the municipality forms part of the stakeholders who must be engaged or consulted hence we have extended notifications to make submission, comments and review as part of the public participation process.	
		2. Is it for the first time Biomental undertake application like this?	Biomental have previously and is currently involved in several applications ranging from Mine permits, prospecting rights and mining rights in different provinces throughout the country.	
		3. What happens in an event there is already an application lodged on the very same application area Letso Investment is involved (Tweed 362)?	We can guarantee the community that Letso investment application was accepted by the Department (DMRE) and there is no other applicant other than Letso Investments	
		4. Is Letso Investments going to hire elder people within the community?	We want to reiterate that Letso Investment will prioritise local community in as far as job	

			<p>and business opportunities are concerned especially the youth and woman in particular. Employment for elder people may only be determined by the type of skill and level of work in terms of man power and also paying attention to the physical fitness required and expected from all workers.</p> <p>Having said that, it is difficult to make such commitment and guarantee that indeed the elderly local citizens will get jobs given the age limit and the physical ability required in the proposed project. However, Letso investment in consultation will royal council and related parties will come with a program that will ensure that elderly benefits from the project</p>	
		We are aware that Biomental at some point was doing consultation for Ndzhaka Mining (Pty)Ltd which lodged an application for prospecting at our area. Where does Biomental stands between Ndzhaka Mining and Letso Investments	We are an independent Environmental Consultant that specialised in rendering consultant services in Mining and other industries to all client who requires our services.	
Madibeng Village				
Community members	17/11/2023	1. What are you going to do with farm dwells who resides within the proposed prospecting area? Is Letso investment have plans to relocate farm dwellers?	Since this is a prospecting project Letso investment have no plans or intentions to relocating farm dwellers and over and above, the prospecting target area is located approximately 4km away from farmstead and there will be necessity to relocate farm dwellers as the activities will occurs away from the residence area.	
		2. How will the community benefits from this project?	It must be emphasised that the license that Letso has applied is for prospecting and does not permits for Mining for commercial value at this stage, meaning that there will be	

			<p>limited jobs available during prospecting as the purpose is to investigate the potential availability of Manganese and Iron Ore. Jobs and other opportunities will be available after the Mining rights have been granted.</p>	
		<p>3. We are concerned that this proposed project will not only benefits the community of Madibeng where the project is located but instead benefits other neighbouring villages instead of Madibeng only</p>	<p>During prospecting there will be very limited job opportunities as this phase encompasses only investigating the potential availability of Manganese and Iron ore. However, when the mine starts operating after mining right is granted, job opportunities will be made available to all communities within the Bathlaro Ba Ga Bareki Traditional Authority.</p>	
		<p>4. What are the measures in place to control or prevent surface and underground water contamination?</p>	<p>The envisaged dust sources will be from drilling activity and traffic on the internal routs.</p> <p>Dust abatement measures such as regular ground suppression will be implemented. Speed limit of 40km/h onsite will be enforced.</p>	
		<p>5. What then happens thereafter after prospecting activity and you are satisfied that the mineral resources are available and economically mineable?</p>	<p>The applicant will endeavour on lodging and application for a Mining right.</p>	
		<p>6. How will Letso Investment ensure safety for workers during prospecting?</p>	<p>Letso Investment will comply and implement all health and Safety regulation during its operations. A health and Safety Officer will be employed during the operation.</p>	
		<p>7. How will the farm owners be compensated when the mine start to be operational?</p>	<p>An agreement will be reached between the applicant and the farm owners concerned. This will happen when the mine is fully operational after granting of the Mine rights</p>	

		<p>8. What measures are there to prevent dust pollution during prospecting?</p>	<p>The envisaged dust sources will be during drilling and traffic on the internal routs.</p> <p>Dust abatement measures such as regular ground suppression will be implemented. Speed limit of 40km/h onsite will be enforced</p>	
		<p>9. We are worried about the safety of our children and livestock given the anticipated influx of traffic during operation and particularly along the main gravel road</p>	<p>All personnel will be required not to exceed a speed of 40km/h on the main road. Induction training will ensure that this aspect is covered.</p> <p>A grievance procedure will be put in place to allow community members to extend their grievances as relate to the prospecting operation.</p>	
Perth Village				
Community Members	18/11/2023	<p>1. Please take us into confidence how the prospecting project and agricultural activities will co-function without compromising one another. Will the prospecting not have impact on agricultural activities within the property.</p>	<p>1. It is very possible for these two activities to co-function without any compromise moreover, given that the farmers are practicing livestock farming of goats, sheeps and cattle and therefore it becomes manageable.</p> <p>2. During prospecting there will be limited surface clearing need for roads, site camps. Only the required footprint along the targets will be clear meaning that livestock pastures will not be signifantly altered.</p> <p>3. The operation design will be in such a way that prospecting activity does not restrict livestock farming or no zones will be erected to curtain movements of livestock on the farm</p> <p>4. All contractors must adhere to a speed limit of 40km/h onsite and</p>	

			must stay alert or look out for animal's strays	
		2. What are the benefits that Letso Investment will bring into the community	It must be emphasised that the license that Letso has applied is for prospecting as oppose to Mining for commercial value meaning that there will be limited jobs available during prospecting as the purpose is to investigate if the study area has the potential of Manganese and Iron Ore. Jobs and other opportunities will be available after the Mining rights have been granted.	
		3. How much Manganese in terms of content percentage are you envisaging?	Letso investments so wishes that at least the metal content should be above 50%	
		4. Is there a report in place we can have access to in as far the studies Biomental are in possession of?	Yes, the report has been made available to the traditional council both electronic and hard copies. The hard copy has been placed at the multipurpose centre. Any community member who so wish to access electronic copy may request to EAP and will be sent via email.	

8.3 The Environmental attributes associated with the alternatives

(The environmental attributes described must include socio-economic, social, heritage, cultural geographical, physical and biological aspects)

8.3.1 Baseline Environment

8.3.1.1 Type of environment affected by the proposed activity

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

The description below is applicable to the entire prospecting area and therefore applicable to all potential exploration drill hole sites and any alternative sites which may be identified in future.

a) Baseline environment

i) Air Quality

The Northern Cape is generally hot and dry. Maximum summer temperatures often exceed 40°C. During winter, the average daytime temperatures are mild and night time temperatures may drop below 0°C. There are four climatic zones in the Northern Cape: hot desert, cold semi-arid, cold desert and hot semi-arid. Kuruman (where the project area is located) is classed as a cold semi-arid area. Rainfall data from the South African Weather Stations (SAWS), Winton and Milner Stations, indicate an MAR between 330 mm and 361 mm. Due to the semi-arid nature of the area, evaporation levels exceed annual rainfall. Wind direction in Kuruman is predominantly from the north east. The main sources of air pollution in the Northern Cape are biomass burning and mining, followed by industry and motor vehicles. Biomass burning is a major contributor of carbon monoxide (CO) whereas mining contributes particulate matter and total suspended particles (TSP). Long range atmospheric transport of air pollutants from the industrialised Highveld and biomass burning in southern and central Africa may influence ambient air quality over parts of the Northern Cape.

Site-specific air quality and emissions data is not available for the prospecting area or the village of Madibeng, however, baseline conditions are expected to be reflective of those experienced at the provincial level due to similar sources, drivers and landscapes.

ii) Archaeology and Cultural Heritage

There are no World Heritage Sites in the vicinity of the project area. The Screening tool sensitivity map was used in determining the requirements for the level of study required for the region. The area within the study area is medium sensitive however according to the screening tool report, the baseline environment outside the prospecting from the periphery of the Moshaweng river shows a very high palaeontology sensitivity. The archaeological and cultural heritage of the study is of very low in terms of sensitivity. The climatic conditions (semi-arid to arid) of the Northern Cape are ideal for the exposure of fresh, un-weathered rocks at surface and fossils related to them. The Northern Cape spans a wide range of geology. On a regional scale, the project area is located on the relatively young Transvaal Supergroup.

Due to the arid conditions, which began approximately 15 million years ago (Miocene Epoch), the region only has sparse fossilised areas and these areas are usually ancient pans, lakes and river systems. Late Cretaceous to Paleogene fluvial and lacustrine sediments towards the base of the succession contain such fossils, but these fossils are rarely exposed. Arid-adapted fossils include land snails, ostrich eggs, plant root casts as well as pockets of lake sediments with molluscs, diatoms and freshwater stromatolites. The palaeontological significance of the Kalahari and Campbell group is albeit generally of low sensitivity, therefore is recommended that a desktop study be undertaken locally, within the bounds of the prospecting area,

From a cultural perspective, occupation of the region took place during the Early Stone Age and centres in the areas where there are hills, e.g. to the east and south (in the vicinity of Kathu). Later Stone Age sites are less obvious but occur in the larger region, with Cape Coastal pottery in the period 100 BC to AD 1900. Tswana-speaking people were the earliest that settled in the region to the north and west of Kuruman. With the annexation of the Tswana areas by the British in 1885, a number of reserves were set up for people to stay in. In 1895 the Tswana-speakers rose up in resistance to the British authority as represented by the government of the Cape Colony, their land was taken away, divided up into farms and given out to white farmers to settle on. Early explorers, hunters, traders and missionaries travelled through the area on their way to Kuruman on what became known as “Missionary Road”.

iii) Geology, Soil and Topography

The topography of the general region and study area is flat to slightly undulating plains, with no distinctive ridges, valleys, ravines, or rocky outcrops.

The area is characterised by a rock formation unit that of the larger Kaapvaal Craton that is mafic intrusion related to the Bushveld Complex known as the Molopo Farms Complex. The Molopo Farms Complex is approximately 3000 m thick and intrudes into sedimentary and minor volcanic rocks of the Transvaal Supergroup, while it is completely covered by up to 220m of Cenozoic Kalahari Group Sediment.

The soil type is red and yellow sandy, well drained soils with sand dunes occurring closer to drainage valleys such as the Moshaweng drainage line. The study area consists of 1.2 metre deep sands with low water holding capacity and low nutrient storage capacity (Harmse, 2013).

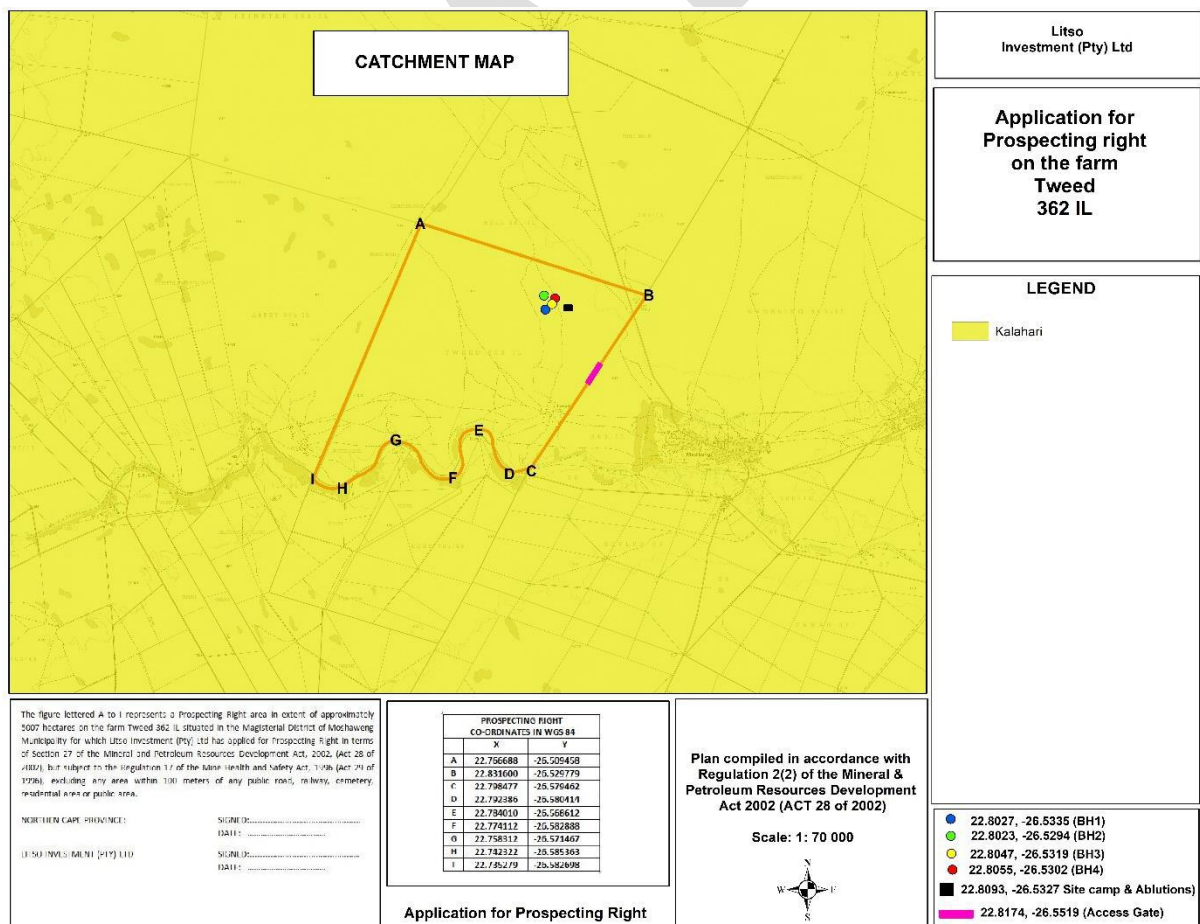


Fig 8.3.1.1(a)(iii): General geology of the area

iv) Hydrology

The following information was obtained from: Water Research Commission. The South African Mine Water Atlas (WRC Project No. K5/2234/3): Catchment Description and Surface Water Resources

The project area is located in quaternary catchment D41H, within the Lower Vaal River Water Management Area (WMA) and Drainage Basin D (Orange River basin). The Lower Vaal WMA is located downstream of the Bloemhof Dam and upstream of Douglas Weir. It extends to the headwaters of the Harts, Molopo and Kuruman River in the north and the Vaal River Downstream of Bloemhof in the south. The Lower Vaal WMA covers a catchment area of 51,543 km². The Lower Vaal WMA can be subdivided into three sub-catchments; Harts, Vaal downstream of Bloemhof and Molopo. Due to the low rainfall, flat topography and sandy soils over much of the WMA, little usable surface runoff is generated in the water management area. The runoff is highly variable and intermittent. Although occasional runoff occurs in the upper reaches of the Molopo River, no record exists of flow having reached the Orange River (according to the Overview of Water Resources Availability and Utilisation, 2003). The estimated runoff for the Molopo sub area is 197 million m³/a. The Farm Tweed 362IL is located approximately on average 100m adjacent to Moshaweng stream which is a intermitted Stream. Evidence gathered during site visit however indicates that the Moshaweng stream is dry throughout the season except during the period of storm rainfall seasons. There are no evidence or sign of any aquatic species.

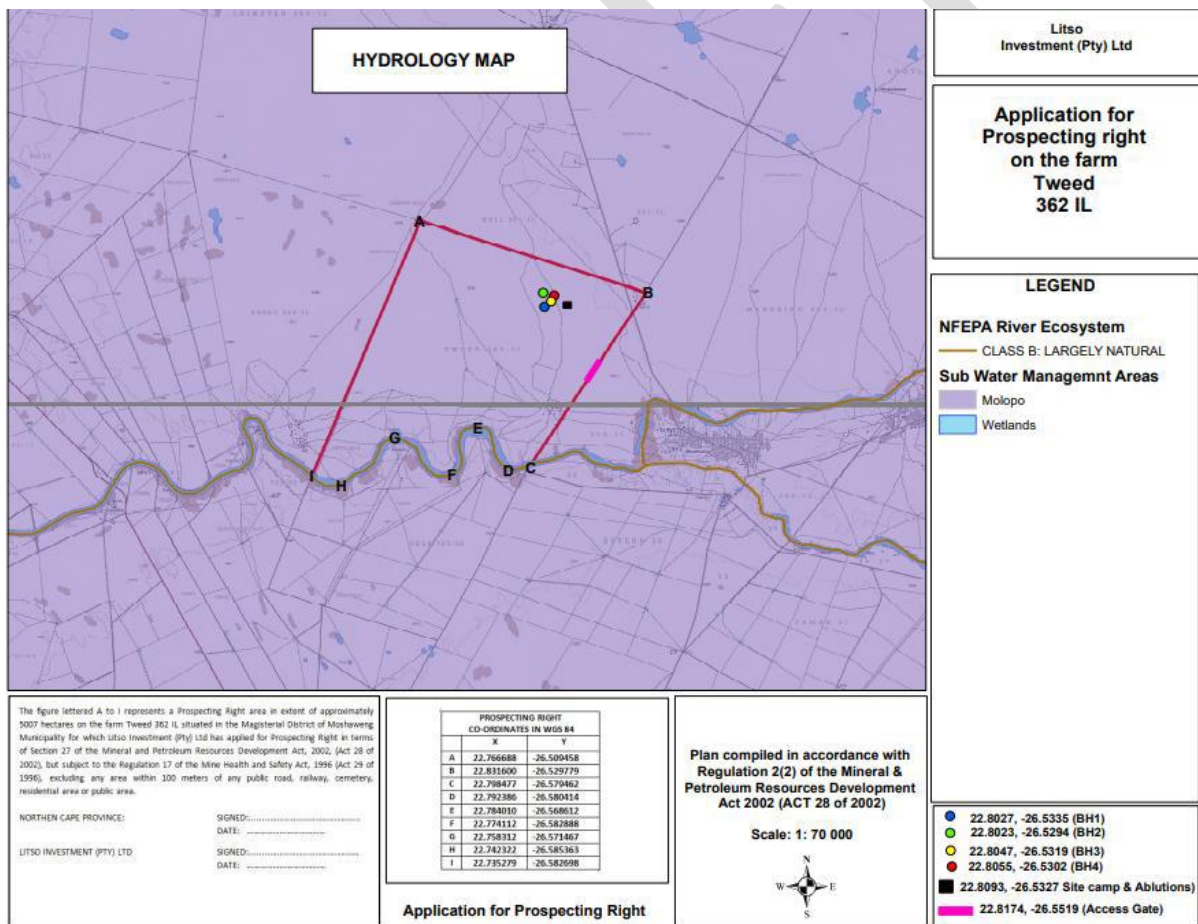


Fig 8.3.1.1 (a)(iv):Hydrology Map

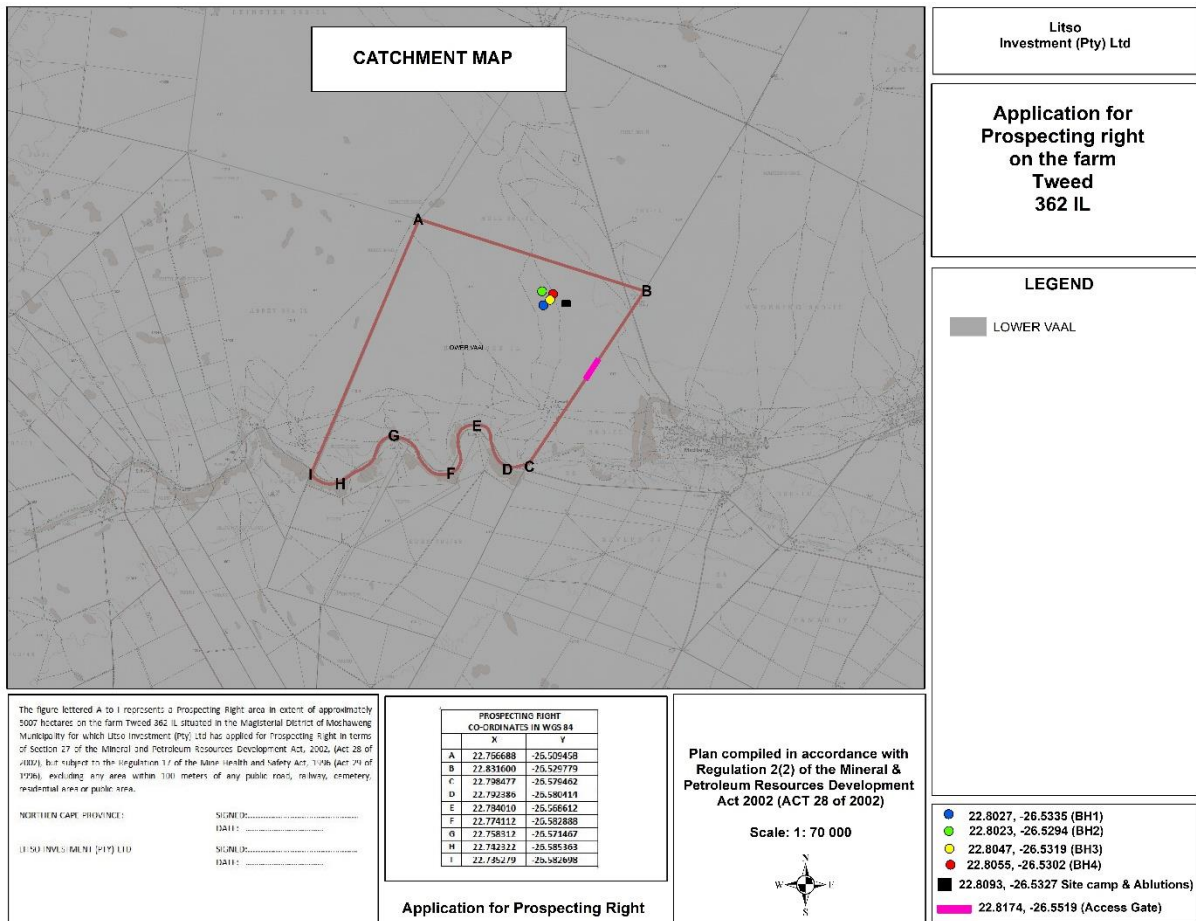


Fig 8.3.1.1(a)iv):Low vaal

(v) Socio Economic

Provincial context, the Northern Cape is the largest of the South African provinces, covering an area of 372 889 km². The province is also the least populous of the country's provinces, with a total population of only 1 193 780 (Community Survey 2016). Only 2.1% of the country's total households reside in the Northern Cape. The capital city of the province is Kimberley. Other important towns include Upington, Springbok, Kuruman and De Aar. Mining and agriculture are the primary economic sectors of the province. There are alluvial diamonds, iron ore, copper, asbestos, manganese, fluorspar, semi-precious stones and marble resources which have been mined in the region. The province has fertile agricultural land in the Orange River Valley where grapes and fruit are cultivated intensively. Sheep farming takes place in the interior Karoo. Wheat, fruit, peanuts, maize and cotton are also produced at the Vaalharts Irrigation Scheme near Warrenton. The Northern Cape is subdivided into five district municipalities: Francis Baard, John Taolo Gaetsewe, Namakwa, Pixley Ka Seme and ZF Mgcawu. The prospecting area is located in

the John Taolo Gaetsewe District Municipality, and the Joe molorong local Municipality in particular.

vi) Regional context

The John Taolo Gaetsewe District Municipality (previously Kgalagadi) is located to the north east of the province and borders Botswana. It is comprised of three local municipalities: Gamagara, Ga-Segonyana and Joe Morolong. The Joe Morolong is the largest of these municipalities in terms of area. There are 186 towns and settlements, of which the majority (approximately 80%) are villages. The district has an established rail network from Sishen South and between Black Rock and Dibeng. It is characterised by a mixture of land uses, of which agriculture and mining are dominant. The population of the District

Municipality was 242 264 (Community Survey 2016), of which 63.3% were aged between 15 and 64 years and 31.9% of the population was under the age of 15. The official unemployment rate of the District Municipality is 29.7%, while the youth unemployment rate is 37.2%. Local context.

The prospecting area is situated within the Joe Molorong Local Municipality which covers 20 215.0 square kilometres area and covers one semi-urban area, villages and commercial farms. The municipality is characterized by rural establishments that are mostly connected through gravel and dirt roads. There are Tribal authorities in our municipal jurisdiction with eight (8) Paramount Chiefs. The population is 84 200 as per the Census 2016 report, 55% females and 45% males with 183 villages and 2 small towns and surrounding private commercial farms and government owned farms (Department of Rural Development and Department of Public Works). There are 20 707 households with a population growth of -0,9%. There are 168 schools, 4 police stations, 24 clinics and 3 community health centers. Agriculture, mining and community services are primary economic sectors. The following mining houses are found within the jurisdiction of our municipality: UMK, South 32, Assmang Blackrock, Tshipi-e-Ntle, Kalagadi, Kudumane Mining Resources, Baga Phadima Sand Mining, Sebilo, Mokala Manganese, East Manganese, Khwara and Lehating.

(vii) Terrestrial Ecology

South Africa is divided up into nine major Biomes. The study area and the surrounding area are found within the Savanna Biome, which is also known as the Bushveld Biome Savanna vegetation types (veldtypes) tend to have a mix of a lower grassy layer, middle shrub layer and an upper woody layer. The mix and ratio of the three layers varies from veldtype to veldtype within the Savanna Biome. The Savanna Biome is subdivided into six bioregions, namely, Central Bushveld; Mopane; Lowveld; Sub-Escarpment Savanna; Eastern Kalahari Bushveld; and Kalahari Duneveld.

The proposed development area is located within the SVk 11 and AZi 3 vegetation unit. The SVk 3 is known as the Molopo Bushveld and the AZi 3 is known as the Southern Kalahari Mekkacha vegetation unit. The Molopo Bushveld is a sub-bioregion of the Eastern Kalahari Bushveld Bioregion which is part of the Savanna biome and the Southern Kalahari Mekkacha is a sub-bioregion of the Inland Saline Vegetation which is part of the Inland Azonal Vegetation biome

VIII) Species Composition

Molopo Bushveld

Some Important taxa found in the area

Tall Trees

Small Trees

Tall Shrubs

Low Shrubs

Graminoids

Acacia erioloba (d)
Boscia albitrunca (d) , *Terminalia sericea* (d)
Acacia mellifera subsp. *Detinens*,
Acacia luederitzii var. *luederitzii*
Lycium hirsutum(d), *Rhigozum trichotomum*(d), *Grewia flava*, *Lycium villosum*, *Rhus burchellii*, *Acacia haematoxylon*
Acacis hebeclada subsp. *Hebeclada*, *Aptosimum albomarginatum*, *Aptosimum marlothii*, *Eriocephalus ericoides*, *Monechma divaricatum*, *Monechma incanum*
Aristida meridionalis(d), *Aristida stipitata* subsp. *Spicata* (d), *Cenchrus ciliaris* (d),

Herbs

Eragrostis lehmanniana (d), *Aristida congesta*, *Eragrostis biflora*, *Eragrostis pallens*, *Eragrostis rigidior*, *Pogonarthria squarrosa*, *Schmidtia kalahariensis*, *Schmidtia pappophorides*, *Stipagrostis ciliata*, *Stipagrostis uniplumis*, *Antheophora argentea*, *Megaloprotachne albescens*, *Panicum kalaharens*, *Acanthosicyos naudiniana*, *Acrotome angustifolia*, *Acrotome inflata*, *Dicoma schinzii*, *Geigeria ornativa*, *Helichrysum cerastioides*, *Hermania tomentosa*, *Hermbstaedtia fleckii*, *Hermbstaedtia linearis*, *Limeum arenicolum*, *Limeum fenestratum*, *Limeum viscosum*, *Lotononis platycarpa*, *Senna italica* subsp. *arachnoides*, *Sericomera remotiflora*, *Tephrosia purpurea* subsp. *leptostachya*, *Tribulus terrestris*

Southern Kalahari Mekgacha

Some Important taxa found in the area

Tall Trees

Tall Shrubs

Low Shrubs

Graminoids

Herbs

Acacia erioloba (d)
Lebeckia linearifolia(d), *Sisymbrium sparteum* (d), *Deverra denudata* subsp. *aphylla*
Aptosimum lineare, *Pechuel-Leoschea leubnitziae*, ,
Cenchrus ciliaris (d), *Chloris virgata* (d), *Enneapogon desvauxii* (d), *Eragrostis annulata* (d), *Eragrostis bicolor*(d), *Odyssea paucinervis*(d), *Eragrostis porosa*, , *Panicum impeditum*, *Sporobolus nervosus*
Amaranthus dinteri subsp. *Dinteri*, *Amaranthus praetermissus*, *Amaranthus shinzianus*, *Boerhavia repens*, *Chamaesyce inaequilatera*, *Cucumis africanus*, *Geigeria ornativa*, *Geigeria pectidea*, *Heliotropium lineare*, *Indigofera alternans*, *Indigofera argyroides*, *Kohautia cynanchica*, *Lotononis platycarpa*, *Osteospermum muricatum*, *platycarpha carlinoids*, *Radyera urens*, *Stachys spathulate*, *Tribulus terrestris*

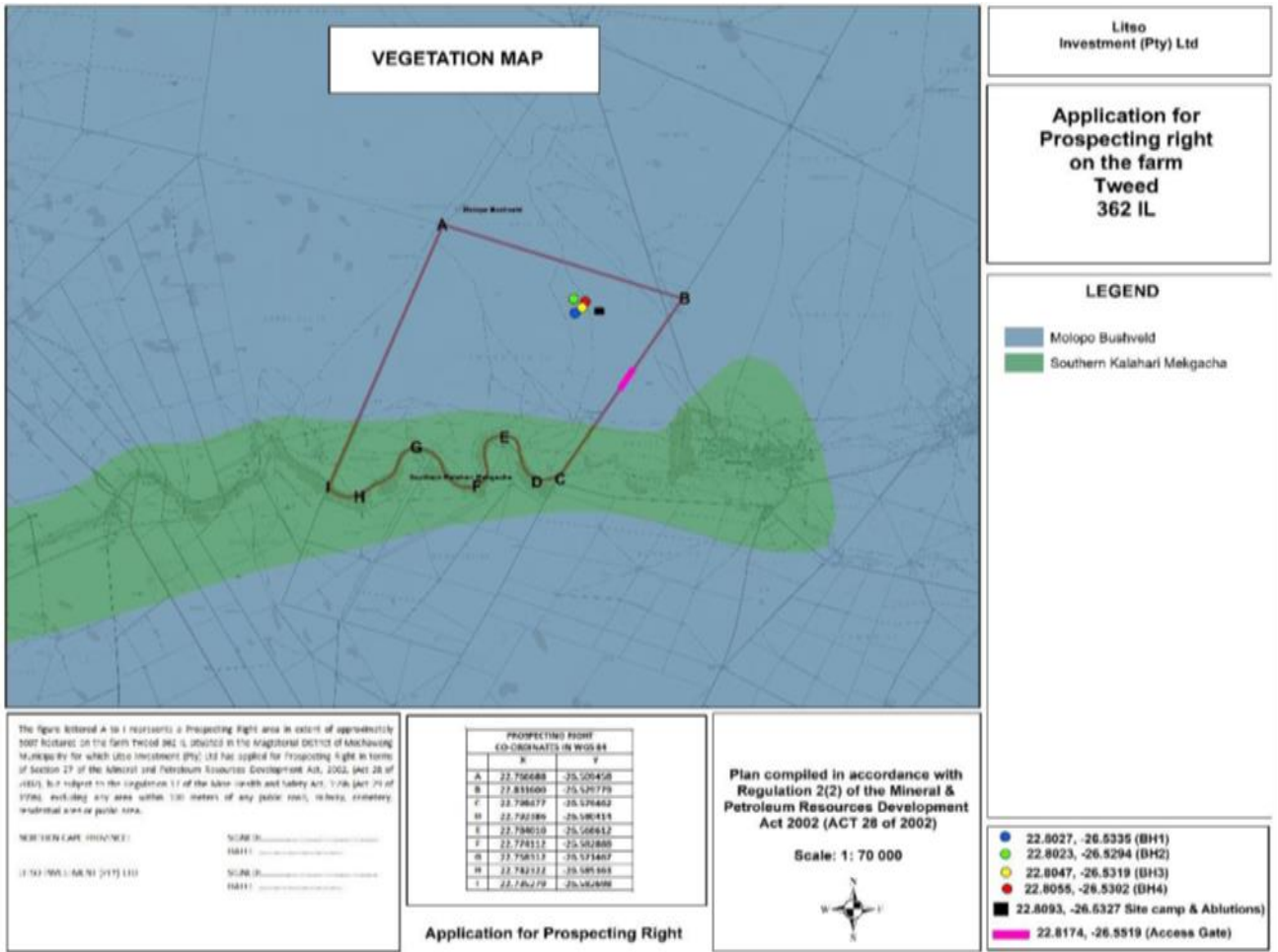


Fig 8.3.1.1(a)(VIII):VegetationMap

8.4 Description of the current land uses

a) land use

The entire prospecting development area is classified as a Non biodiversity priority area. Land use surrounding the prospecting development area includes a natural grassland and sparsely wooded grassland with bare riverbed materials in the south:

Land use is defined as the operations that are occurring on land, as carried out by humans, with the intention to obtain products and/or benefits through using land resources. Land use therefore refers to the purpose the land serves, such as recreation, natural or agriculture. From Google Earth satellite imagery, ground-and during a site-visit undertaken, the land use associated with the prospecting is agriculture and livestock farming. The prospecting area has a medium agricultural sensitive theme. The study area current land use is limited to livestock farming with related infrastructure available.

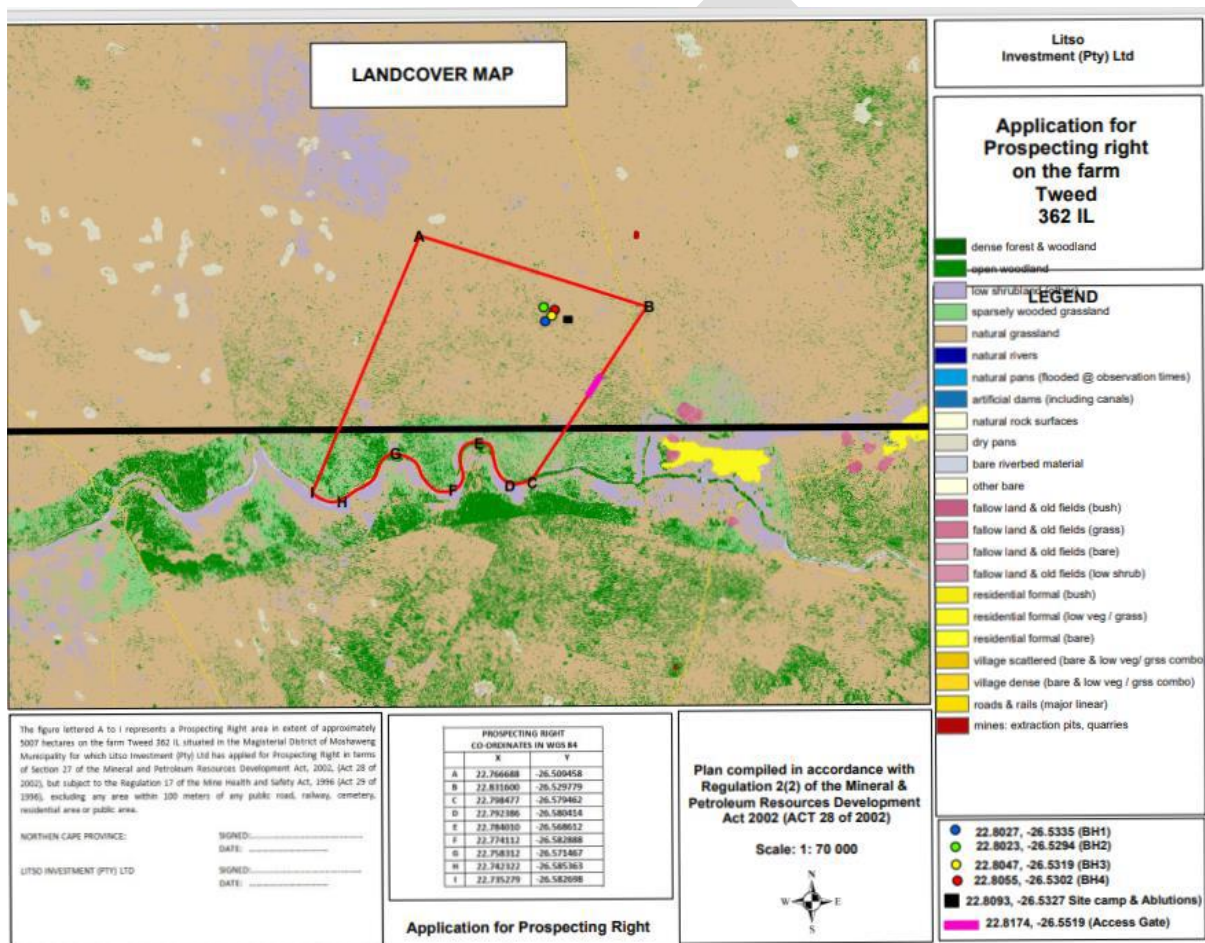


Fig 8.4(a) Land cover Map

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

Specific environmental features and / or infrastructure occur on site or

within close proximity include:

- Agricultural land
- Farmstead

- gravel road
- 1 borehole
- Parameter fence with and access road

c) Environmental and current land use map

(Show all environmental, and current land use features)

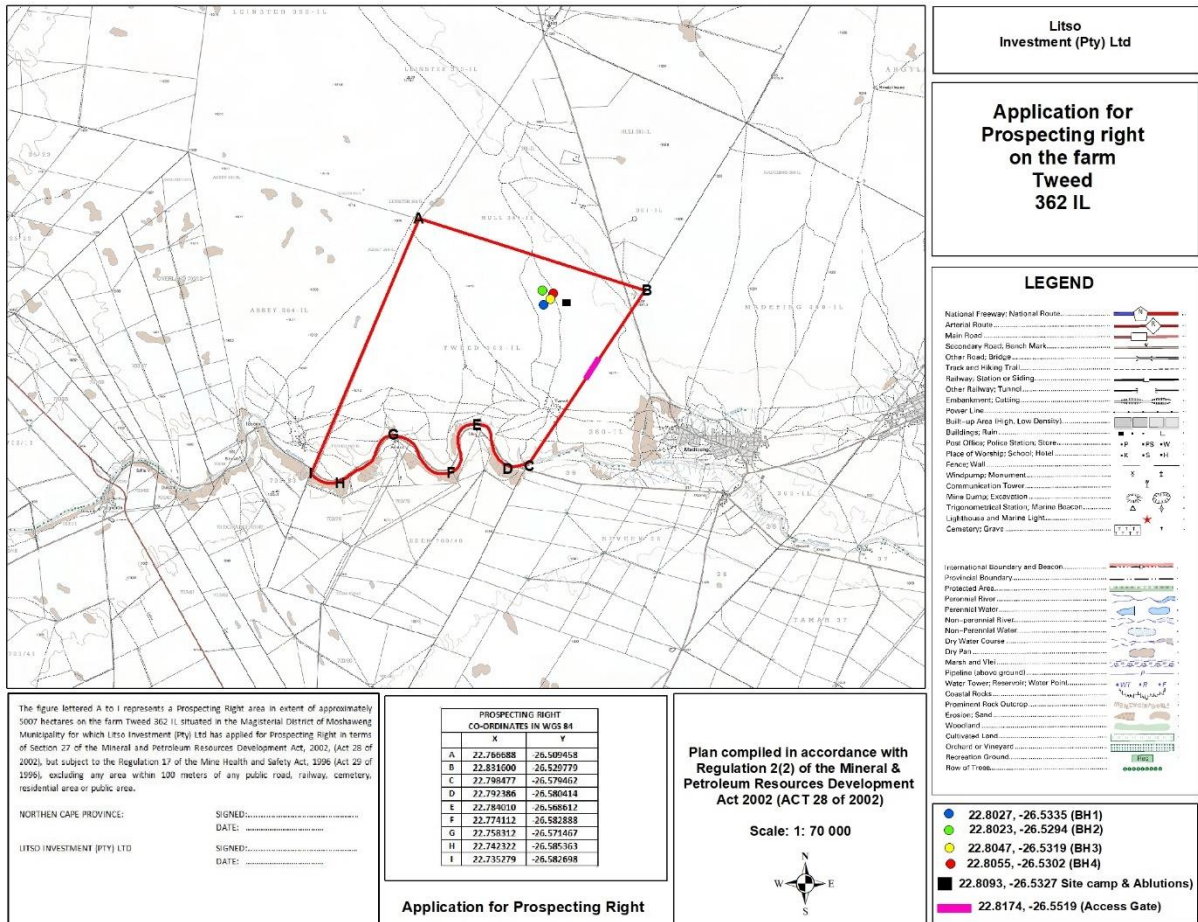


Fig 8.4(c): layout with current and land use map

8.5 Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts may occur

(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).

The potential impacts of the planned invasive prospecting activities (drilling) are listed below. Non-invasive prospecting activities are not expected to result in any environmental or socio-economic impacts. Vegetation clearing for drill hole areas and access tracks as well as minor earth moving activities may result in the following impacts:

- Dust generated from activities.
- Damage to buried archaeological or paleontological resources of significance.

Leaks from vehicles and machinery on site, inadequate hydrocarbon handling and storage, inadequate waste management and spills from ablutions may result in the following impact: Contamination of remaining in situ soil resources (limited potential of soil resources). The presence of vehicles and machinery as well as personnel on site for drilling activities may result with the following impacts:

- Noise.
- Compaction of remaining in situ soil resources and subsequent negative impact on future vegetation re-establishment.
- Disturbance of flora and fauna which may subsequently re-established.

Refer to table A below for an indication of the significance of the potential impacts and extent to which they can be avoided, managed or mitigated.

A detailed assessment is done of the significance of the potential impacts considering their magnitude, scale, duration and probability; as well as the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and extent to which they can be avoided, managed or mitigated.

8.6 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 were determined in order to decide the extent to which the initial site layout needs revision).

Biomental Services (Pty)Ltd used an impact ranking tool which is a quantitative manner of investigating, assessing and evaluating the potential impacts / risks resulting from the activities associated with the proposed activity on the receiving environment; i.e. the biophysical, socio-economic and cultural heritage environment. The methodology encompasses an assessment of the nature, extent, duration, probability and significance of the identified potential environmental, social and cultural impacts of the mining operation, including the cumulative environmental impacts. The significance of both positive and negative potential impacts will be determined through the evaluation of impact consequence and likelihood of occurrence.

The following risk assessment model has been used for determination of the significance of impacts.

$$\text{SIGNIFICANCE} = (\text{MAGNITUDE} + \text{DURATION} + \text{SCALE}) \times \text{PROBABILITY}$$

The environmental evaluation is done with the assumption that all mitigation measures and rehabilitation plans have been adhered to (Hacking, 1999).

MAGNITUDE (M)

10 – Very high (or unknown)
8 – High

6 – Moderate

4 – Low

2 – Minor

SCALE(S)

5 – International

4 – National

3 – Regional

2 – Local

1 – Site

DURATION (D)

5 – Permanent

4 – Long-term (ceases at the end of operation)

3 – Medium-term (2-4 years)

2 – Short-term (0-1 years)

1 – Immediate

PROBABILITY(P)

5 – Definite (or unknown)

4 – High probability

3 – Medium probability

2 – Low probability

1 – Improbable

8.7 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)

The proposed prospecting operations and the current proposed site plan shows to have an overall low negative impact on the property. However, the property is situated in proximity to environmental sensitive areas with high palaeontological sensitivity, aquatic CBA of Moshaweng stream and high terrestrial sensitivity and wetland features. The study area is located approximately 4km from the residential area. The visual impact that may be associated with the prospecting activity is of low impacts if mitigated and adherence strategies are implemented. Noise pollution during operation is of low-impacts with potential to be at minimum level if management strategies are implemented. Any alterations to the site layout or prospecting and prospecting related activities may result in a lesser significant impact on the environment but not significant enough to consider alterations.

The residing farm dwellers and the surrounding farm owners may be minimally influenced by the prospecting operations in regard to noise, air quality loss and grazing field loss. After considering alternative processes and site layout, these alterations did not provide any significant minimization of the impacts affecting the farming activities and residing individuals. It is rather recommended that stricter implementation and adherence to the mitigation measures.

8.8 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)

Geology and mineral resource

Level of risk: low

- Ensure that optimal use is made of the available mineral resource through proper planning.
- The targets should be delineated first and all infrastructure positions should be selected with the main aim of avoiding sterilization of future resources.
- No dumping of materials prior to approval by mine manager and ECO.

Topography

Level of risk: Low

- Backfill all drilling excavations continuously with overburden and waste bricks, if possible, otherwise when they become available;
- Employ effective concurrent rehabilitation strategies to restore surface topography of excavations on the drilling and the plant site;
- Stabilise the residue deposits;
- All infrastructure (including the small drill camp) should be demolished during closure.

Soil erosion

Level of risk: Low

Mitigation measures

- At no point may plant cover be removed within the no-development zones and buffers;

- All attempts must be made to avoid exposure of dispersive soils;
- Re-establishment of plant cover on disturbed areas (active seeding programme) must take place as soon as possible, once activities in the area have ceased;
- Ground exposure should be minimised in terms of the surface area and duration, wherever possible;
- The small drill camp that will be constructed will require the clearing of vegetation should ideally occur during the dry season only;
- Construction during the rainy season (November to March) should be closely monitored and controlled;
- The surface run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers;
- The topsoil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion;
- All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in order to avoid excessive erosional induced losses;
- Excavated and stockpiled soil material are to be stored and bermed on the higher lying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate;
- Stockpiles susceptible to wind erosion are to be covered during windy periods;
- Inspections must be carried out at regular intervals to identify areas where erosion is occurring;
- Appropriate remedial action, including the rehabilitation of eroded areas, must occur;
- Rehabilitation of the erosion channels and gullies;
- Dust suppression should take place, without compromising the sensitive water balance of the area;
- Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion;
- Topsoil stockpiles must be kept as small as possible in order to prevent compaction and the formation of anaerobic conditions;
- Topsoil must be stockpiled for the shortest possible timeframes in order to ensure that the quality of the topsoil is not impaired;
- Topsoil stockpiles must be kept separate from sub-soils;
- The topsoil should be replaced as soon as possible on to the backfilled areas, thereby allowing for the re-growth of the seed bank contained within the topsoil;
- Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution;
- Spill kits to clean up accidental spills from earthmoving machinery must be well marked and available on site;
- Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures;
- All facilities where dangerous materials are stored must be contained in a bund wall;
- Vehicles and machinery should be regularly serviced and maintained.

Soil pollution

Level of risk: Low

Mitigation measures

- Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution.
- Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site.

- Workers must undergo induction to ensure that they are prepared for rapid clean-up procedures.
- All facilities where dangerous materials are stored must be contained in a bund wall.
- Vehicles and machinery should be regularly serviced and maintained.

Land capability and land use

Level of risk: Low

Mitigation measures

- Ensure that optimal use is made of the available land through consultation with land owner and proper planning of mining activities.
- Surface agreement or purchase agreement to be signed with land owners.
- Employ effective rehabilitation strategies to restore land capability and land use potential of the farm.
- All activities to be restricted within the demarcated areas.
- Ensure that land which is not used during construction is made available for grazing farming.

Ground water

Level of risk: Low

Mitigation measures

Training and awareness

- Make all employees aware of water conservation/water demand management, water pollution avoidance and minimization measures reporting procedure and registry of incidents.
- Train all employees to reduce water consumption.
- Make one (1) individual person at a management level responsible for the management of the overall mine water balance. Train departmental heads in the managing of water balance, water pollution and water conservation within their sectors.
- Train all employees in the implementation of standard operating procedures (SOP's) (e.g. hydrocarbon management, sewerage plant management, monitoring and record keeping).
- Arrangements shall be implemented to support water resources, aquatic environments, ecosystem services and conservation research efforts carried out by local, regional and national research groups in order to further knowledge and understanding of such attributes in the areas of operation.
- Mechanisms shall be created and implemented to provide information and raise awareness among employees, customers and suppliers and other stakeholders to enhance knowledge and understanding of water resources, aquatic environments and conservation issues.
- Allow for a safe working environment
- Implement a groundwater monitoring program, which includes:
 - Groundwater levels and quality;
 - Discharge quality and volume.
 - Maintain reticulation infrastructure
 - Pump maintenance and supply spares;
 - Flow and level monitoring;
 - Continuous inspection of the reticulation system.

Indigenous flora

Level of risk: Low

Mitigation measures

- Footprint areas of the mining activities must be scanned for Red Listed and protected plant species prior to prospecting;
- It is recommended that these plants be identified and marked prior to prospecting.
- These plants should where possible, be incorporated into the design layout and left in situ.
- However, if threatened by prospecting activity, these plants should be translocated (with the relevant permits from DFFE) and relocated if possible.
- A management plan should be implemented to ensure proper establishment of ex situ individuals, and should include a monitoring programme for at least two years after re-establishment in order to ensure successful translocation.
- All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.
- Minimise the footprint of transformation
- Encourage proper rehabilitation of mined areas
- Encourage the growth of natural plant species (diverse selection of natural plant species).
- Mechanical methods (hand-pulling) of control to be implemented extensively.
- Annual follow-up operations to be implemented.
- Ensure measures for the adherence to speed limit.
- Maintenance of firebreaks;
- No trees felled for firewood;

Alien invasive plants

Level of risk: Low

- Minimise the footprint of transformation.
- Encourage proper rehabilitation of mined areas.
- Encourage the growth of natural plant species.
- Mechanical methods (hand-pulling) of control to be implemented extensively.
- Annual follow-up operations to be implemented.

Fauna

Level of risk: Low

Mitigation measures

- Mining activities must be planned, where possible in order to encourage (faunal dispersal) and should minimise dissection or fragmentation of any important faunal habitat type.
- The extent of the mining area should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance). No construction personnel or vehicles may leave the demarcated area except those authorized to do so. Those areas surrounding the mine site that are not part of the demarcated development area should be considered as a no-go zone for employees, machinery or even visitors.
- Appointment of a full-time ECO must render guidance to the staff and contractors with respect to suitable areas for all related disturbance, and must ensure that all contractors and workers undergo Environmental Induction prior to commencing with work on site.
- All those working on site must undergo environmental induction with regards to fauna and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition.
- All those working on site must be educated about the conservation importance of the fauna and flora occurring on site.
- The environmental induction should occur in the appropriate languages for the workers who may require translation.
- Reptiles and amphibians that are exposed during the clearing operations should be captured for later release or translocation by a qualified expert.

- Employ measures that ensure adherence to the speed limit.
- Careful consideration is required when planning the placement for stockpiling topsoil and the creation of access routes in order to avoid the destruction of pristine habitats and minimise the overall mining footprint.
- The Footprint areas of the mining activities must be scanned for Red Listed and protected plant species prior to mining;
- Low angle access ramp in excavations;
- Snares & traps removed and destroyed; and
- Maintenance of firebreaks.

Habitat

Level of risk: Low

Mitigation measures

- Prospecting activities must be planned, where possible in order to encourage faunal dispersal and should minimise dissection or fragmentation of any important faunal habitat type.
- The extent of the prospecting area should be demarcated on site layout plans (preferably on disturbed areas or those identified with low conservation importance). No construction personnel or vehicles may leave the demarcated area except those authorised to do so.

Air quality

Level of risk: Low

Mitigation measures

- Vegetation must be removed when soil stripping is required only. These areas should be limited to include those areas required for mining only, hereby reducing the surface area exposed to wind erosion. Adequate demarcation of these areas should be undertaken.
- Control options pertaining to topsoil removal, loading and dumping are generally limited to wet suppression.
- Where it is logistically possible, control methods for gravel roads should be utilised to reduce the re-suspension of particulates. Feasible methods include wet suppression, avoidance of unnecessary traffic, speed control and avoidance of track-on of material onto paved and treated roads.
- The length of time where open areas are exposed should be restricted. Mining should not be delayed after vegetation has been cleared and topsoil removed.
- Dust suppression methods should, where logistically possible, must be implemented at all areas that may / are exposed for long periods of time.
- For all drilling activities management should undertake to implement health measures in terms of personal dust exposure, for all its employees
- Mining should be restricted during weather event of high wind conditions.

Noise and vibration

Level of risk: Low

Mitigation measures

- Machinery with low noise levels which complies with the manufacturer's specifications to be used.
- Construction activities to take place during daytime period only.
- Noise monitoring on a quarterly basis.
- Vehicles to comply with manufacturers' specifications and any activity which will exceed 90.0dBA to be done during daytime only.

- Emergency generators to be placed in such a manner that it is away from any residential area.
- Noise monitoring to be done along the mine footprint and noise sources within the mine boundary on a monthly basis after which the frequency can change to a quarterly basis.
- The siren when conveyor, hauling vehicles area reversing and/or any other mine vehicle to be replaced with a vibrating type siren if it is approved by the Department of Labour.
- Haul roads to be levelled on a regular basis to avoid the formation of potholes.
- Actively manage the process and the noise management plan must be used to ensure compliance to the noise regulations and/or standards. The levels to be evaluated in terms of the baseline noise levels.

Visual impacts

Level of risk: Low

Mitigation measures

Mitigation measures may be considered in two categories:

- Primary measures that intrinsically comprise part of the development design through alternative process. Mitigation measures are more effective if they are implemented from project inception when alternatives are being considered; and
- Secondary measures designed to specifically address the remaining negative effects of the final development proposals:
- Primary measures that will be implemented should mainly be measures that minimise the visual impact by softening the visibility of the drilling activities, by “blending” with the surrounding areas. Such measures will include rehabilitation of the disturbed area, by re-vegetation of the area and using an aesthetically pleasing design for the proposed development.
- Secondary measures will include planting of trees, re-vegetation of the area and using lights that will not create a night sky glow. It will also include measures to minimise the visual impact during the operational phase and construction phase.
- During the construction phase the following mitigation measures should be implemented to minimise the visual impact.
- Ensure that the design fits into the surrounding environment and it is aesthetically pleasing.
- Plan the placement of lay-down areas and any potential temporary construction camps in order to minimise vegetation clearing.
- Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads.
- Ensure that rubble, litter and disused construction materials are managed and removed regularly.
- Ensure that all infrastructure and the site and general surrounds are maintained in a neat and appealing way.
- Reduce and control construction dust emitting activities through the use of approved dust suppression techniques; and
- Restrict construction activities to daylight hours in order to negate or reduce the visual impacts associated with lighting or restrict lighting to certain areas.
- During operational phase, the following mitigation measures should be implemented to minimise the visual impact.
- Ensure that the design fits into the surrounding environment and it is aesthetically pleasing.
- Ensure that all infrastructure and the site and general surroundings are maintained in a neat and appealing way;
- Rehabilitation of disturbed areas and re-establishment of vegetation;
- Mitigation of lighting impacts includes the pro-active design, planning and specification lighting for the development by a lighting engineer. The correct specification and placement of lighting and light fixtures for the proposed development will go far to contain

- rather than spread the light
- Secondary impacts anticipated as a result of the proposed development (i.e. visual character, sense of place and tourism potential) are not possible to mitigate.

Traffic and road safety

Level of risk: low

Mitigation measures

- Implement measures that ensure the adherence to traffic rules.

Archeological,Cultural and Paleontology resources

Level of risk: Low

Mitigation measures

- Any heritage and cultural resources (e.g. graveyards, ruins, historic structures, etc.) must be protected and preserved by the delineation of a no go zone.
- Should any further graves be disturbed, exposed or uncovered during site preparations, these should immediately be reported to an accredited archaeologist. Burial remains should not be disturbed or removed until inspected by an archaeologist.
- Stone tools should be avoided where possible and fresh exposures should be recorded before destruction. All stone tool artefacts should be recorded, mapped and collected before destruction.
- Should development necessitate impact on any building structures, the developer should apply for a SAHRA Site destruction permit prior to commencement of construction.

Socio-economic

Level of risk: High

Mitigation measures

In order to ensure that negative impacts are minimised and positives are enhanced, the following is recommended:

- Implement the mitigation measures as proposed in this report.
- As job creation is one of the most pressing socio-economic needs in the local community, Letso Investment Pty(Ltd)through the development of the project should focus on SMME development and related local job creation, whilst considering the limitations of the available local skills.
- Assistance in terms of skills development for those that would be employed during the start-up and construction phases of the project, as well as for permanent employees during the operational phase of the project would be necessary. Education is critical to sustain the socio-economic development of the community members living in the area. Continued support for training and capacity building thus remain important.
- Possible SMME links to the project should be pursued to maximise local business benefits;
- The establishment of a management and monitoring committee to deal with increased social pressure on the local area, as well as increased pressure on the infrastructure and services provision is recommended. Such a committee should not only consist of representatives of Letso Investment (Pty) Ltd, but all the mining companies operating in the area together with representatives from the Joe Molorong Local Municipality.
- Letso Investment (Pty) Ltd should communicate and present their involvement in the community (goodwill, social responsibility, capacity building programmes, skills development, general development support and so forth) to obtain community support.

- Ensuring continued contact and communication between the Municipality, and the community leaders, as well as nearby landowners is critical during the entire prospecting process.

Interested and affected parties

Level of risk: Low

Mitigation measures

- Maintain active communication with IAPs.
- IAPs must be kept up to date on any changes in the prospecting operation.
- A complaints management system (register) should be maintained by the mine to ensure that all issues raised by community members are followed up and addressed appropriately.

8.9 Motivation where no alternative sites were considered

No alternative site locations have been considered to-date as the site selection is based on the expected mineral resources likely to occur within a known geological environment.

9. Statement motivating the alternative development location within the overall site

(Provide a statement motivating the final site layout that is proposed) If necessary, the location of additional exploration boreholes to be drilled will come to light post the Phase 1 (non-invasive prospecting) activities.

The site does not overlap any sensitive environmental features or protected areas, therefore, limiting the potential negative environmental impacts of any future drilling sites within the proposed prospecting area (drilling locations will nonetheless be assessed in terms of measures provided in this document to confirm the presence / absence of any hitherto unknown sensitive features or species). Requisite permits in terms of the NFA and NCNCA will be obtained if necessary for the clearance of indigenous and protected flora (currently considered unlikely). It is considered unlikely that potential impacts will occur to surrounding landowners or land use practises which would otherwise warrant pursuing further alternative investigation. The socio economic benefit of this project must be construed within the context of scope of work to be undertaken which in this case prospecting which comes will limited job and business opportunity as the purpose of this application is to investigate the potential availability of manganese and iron ore at farm Tween 362. The project developer or applicant should avoid raising high expectation of jobs and business opportunity as this may lead to distrust and disappointment from community.

10.Full description of the process undertaken to identify, assess and rank the impacts and risk 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).

The potential impacts which may arise as a result of the planned exploration drilling activities are considered typical of these activities and were determined by considering the nature of the activity, the equipment and materials utilised, the type of waste generated, common incidents which lead to impacts, and the known timeframes and the proximity in relation to the environmental features of the site. Impact Assessment Methodology and rationale above was used to assess the significance of the potential impacts. Refer to the table A and B below for any assessment of each identified potentially significant impact and risk

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A) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities including those that could or should have been identified by knowledgeable persons and not only those that were raised by registered interested and affected parties - the supporting impact assessment conducted by the EAP must be attached as an appendix)

The potential impacts of the planned invasive prospecting activities (exploration drilling) have been assessed and summarised in the table below, non-invasive prospecting activities are not expected to result in any environmental or socio-economic impacts.

ACTIVITIES	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE IN WHICH IMPACT IS ANTICIPATED	SIGNIFICANCE IF NOT MITIGATED				MITIGATION TYPE	SIGNIFICANCE IF MITIGATED			
				RATING					RATING			
				M	D	S	P		M	D	S	P
Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	Loss of vegetation (Possible plant species of conservation concern) from clearing or harvesting by personnel or uncontrolled fires set by personnel	Biodiversity	Operational (Phase 2 - Drilling)	6	2	1	3	- Where possible available access tracks will be used - Drill sites should be evaluated by the ECO prior to any clearing activities in order to determine the presence of any sensitive, protected or indigenous species and to advise permitting requirements	4	1	1	5

							<ul style="list-style-type: none"> - When visiting drill sites, the ECO will take a before photo that will be compared with an after photo that the ECO will take once drilling has been completed. - Avoid all plant species of conservation concern (in the unlikely event that they are present) by changing the location/ extent / spatial layout of sites accordingly prior to clearing - Where avoidance is not possible, the necessary permits / licenses must be sought before any clearance activities are permitted (NCNCA, NFA and NEMBA) 				
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	Loss of animal species as a result of collisions with vehicles or hunting and trapping by personnel			2	2	1	3		2	2	1	4
ACTIVITIES	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE IN WHICH IMPACT IS ANTICIPATED	SIGNIFICANCE IF NOT MITIGATED				MITIGATION TYPE	SIGNIFICANCE IF MITIGATED			
				RATING					RATING			
				M	D	S	P		M	D	S	P
								- Avoid clearing trees where possible - No hunting and harvesting of plants or animals must be allowed - No uncontrolled fires must be allowed - Intervening by planting indigenous vegetation in disturbed areas should natural revegetation proves unsuccessful				

Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	Noise from drilling activities may result in nuisance	Social		4	4	1	5	-Maintaining equipment and machinery in good working order - Switching off equipment when not in use	2	3	1	5
Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	Damage to buried archaeological or or paleontological resources of significance	Heritage; Socio economic		4	2	1	3	Implement a chance finds procedure as detailed in Table 2	2	2	1	5

Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	Result in nuisance impacts	Air quality; Socioeconomic		6	3	1	3	- Areas to be cleared will be limited to the minimum extent possible - Wet suppression must be implemented where dust plumes are noted	4	2	1	5
Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	Heavy vehicles and machinery on site may result in potential hydrocarbon leaks which may in turn pollute the soil	Soil		6	3	1	5	Implementing spill prevention measures such as handling and storing hydrocarbons on impermeable surfaces - Adequately maintaining vehicles and machinery to prevent leaks- Plastic lining of sumps - Cleaning any spills immediately	2	2	1	5
ACTIVITIES	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE IN WHICH	SIGNIFICANCE IF NOT MITIGATED			MITIGATION TYPE	SIGNIFICANCE IF MITIGATED				

			IMPACT IS ANTICIPATED	RATING					RATING			
				M	D	S	P		M	D	S	P
Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	The impacts may lead to soil infertility and removal of soil top layer	Erosion	Construction Operation	6	3	1	4	-At no point may plant cover be removed within the no-development zones and buffers; -All attempts must be made to avoid exposure of dispersive soils; -Re-establishment of plant cover on disturbed areas (active seeding programme) must take place as soon as possible, once activities in the area have ceased; -Ground exposure should be minimised in terms of the surface area and duration, wherever possible;	4	2	1	5

							<p>-The small drill camp that will be constructed will require the clearing of vegetation should ideally occur during the dry season only;</p> <p>-Construction during the rainy season (November to March) should be closely monitored and controlled;</p> <p>-The surface run-off from the exposed ground should be controlled with the careful placement of flow retarding barriers;</p> <p>-The topsoil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion;</p> <p>-All stockpiles must be kept as small as possible, with gentle slopes (18 degrees) in</p>				
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							<p>order to avoid excessive erosional induced losses;</p> <ul style="list-style-type: none"> -Excavated and stockpiled soil material are to be stored and bermed on the higher lying areas of the footprint area and not in any storm water run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate; -Stockpiles susceptible to wind erosion are to be covered during windy periods; -Inspections must be carried out at regular intervals to identify areas where erosion is occurring; -Appropriate remedial action, including the rehabilitation of 				
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							<p>eroded areas, must occur;</p> <ul style="list-style-type: none"> -Rehabilitation of the erosion channels and gullies; -Dust suppression should take place, without compromising the sensitive water balance of the area; -Linear infrastructure such as roads and pipelines will be inspected at least monthly to check that the associated water management infrastructure is effective in controlling erosion; -Topsoil stockpiles must be kept as small as possible in order to prevent compaction and the formation of anaerobic conditions; -Topsoil must be stockpiled for the 				
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							<p>shortest possible timeframes in order to ensure that the quality of the topsoil is not impaired;</p> <ul style="list-style-type: none"> -Topsoil stockpiles must be kept separate from sub-soils; -The topsoil should be replaced as soon as possible on to the backfilled areas, thereby allowing for the re-growth of the seed bank contained within the topsoil; -Refuelling must take place in well demarcated areas and over suitable drip trays to prevent soil pollution; -Spill kits to clean up accidental spills from earthmoving machinery must be well marked and available on site; -Workers must undergo induction 				
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								to ensure that they are prepared for rapid clean-up procedures;				
	Heavy vehicles and machinery on site may result in soil compaction subsequently impacting vegetation reestablishment	Soil		6	3	1	5	- Minimising areas to be disturbed by vehicle and machinery, - Ripping and profiling compacted soil	2	2	1	5
Stores and ablutions	Waste spills may result in pollution of soil	Soil		4	3	2	4	- Cleaning any spills immediately - Implementing adequate waste management practices	4	2	1	5
Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling -Diamond drilling	Sterilisation of the Minerals	Geology	Operational	6	2	1	4	-Ensure that optimal use is made of the available mineral resource through proper planning. -The targets should be delineated first and all infrastructure positions should be selected with the main aim of avoiding sterilization of future resources.	2	2	1	5

								-No dumping of materials prior to approval by mine manager and ECO.				
-Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling -Diamond drilling	Altering of the Topography	Topography	Site establishment Operation	4	2	1	3	-Backfill all drilling excavations continuously with overburden and waste bricks, if possible, otherwise when they become available; -Employ effective concurrent rehabilitation strategies to restore surface topography of excavations on the drilling and the plant site; -Stabilise the residue deposits; -All infrastructure (including the small drill camp) should be demolished during closure	4	2	1	5
-Clearing access track and drill sites - Demarcation of drill pad	Land degradation	Land Capability and Land use	Construction Operation	6	3	1	4	-Ensure that optimal use is made of the available land through	2	2	1	5

<ul style="list-style-type: none"> -Temporary drillers laydown -Temporary core yard for cutting and processing drilling -Diamond drilling 							<ul style="list-style-type: none"> consultation with land owner and proper planning of mining activities. -Surface agreement or purchase agreement to be signed with land owners. -Employ effective rehabilitation strategies to restore land capability and land use potential of the farm. -All activities to be restricted within the demarcated areas. -Ensure that land which is not used during construction is made available for grazing farming. 				
<ul style="list-style-type: none"> -Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown 	<p>The infrastructure onsite and activities may have visual impact on the farm and surrounding neighbouring areas.</p>	Visual	Construction Operation	6	3	1	4	2	1	1	5

<p>-Temporary core yard for cutting and processing drilling -Diamond drilling</p>						<p>measures are more effective if they are implemented from project inception when alternatives are being considered; and</p> <p>-Secondary measures designed to specifically address the remaining negative effects of the final development proposals:</p> <p>-Primary measures that will be implemented should mainly be measures that minimise the visual impact by softening the visibility of the drilling activities, by “blending” with the surrounding areas. Such measures will include rehabilitation of the disturbed area, by re-</p>				
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							<p>vegetation of the area and using an aesthetically pleasing design for the proposed development.</p> <p>-Secondary measures will include planting of trees, re-vegetation of the area and using lights that will not create a night sky glow. It will also include measures to minimise the visual impact during the operational phase and construction phase.</p> <p>-During the construction phase the following mitigation measures should be implemented to minimise the visual impact.</p> <p>-Ensure that the design fits into the surrounding environment and it is aesthetically pleasing.</p>				
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							<p>-Plan the placement of lay-down areas and any potential temporary construction camps in order to minimise vegetation clearing.</p> <p>-Restrict the activities and movement of construction workers and vehicles to the immediate construction site and existing access roads.</p> <p>-Ensure that rubble, litter and disused construction materials are managed and removed regularly.</p> <p>-Ensure that all infrastructure and the site and general surrounds are maintained in a neat and appealing way.</p> <p>-Reduce and control</p>				
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							<p>construction dust emitting activities through the use of approved dust suppression techniques; and</p> <ul style="list-style-type: none"> -Restrict construction activities to daylight hours in order to negate or reduce the visual impacts associated with lighting or restrict lighting to certain areas. -During operational phase, the following mitigation measures should be implemented to minimise the visual impact. -Ensure that the design fits into the surrounding environment and it is aesthetically pleasing. -Ensure that all infrastructure and the site and general surroundings are 				
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							<p>maintained in a neat and appealing way;</p> <ul style="list-style-type: none"> -Rehabilitation of disturbed areas and re-establishment of vegetation; -Mitigation of lighting impacts include the proactive design, planning and specification lighting for the development by a lighting engineer. The correct specification and placement of lighting and light fixtures for the proposed development will go far to contain -rather than spread the light -Secondary impacts anticipated as a result of the proposed development (i.e.visual character, sense of place and tourism potential) 				
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								are not possible to mitigate.				
Traffic Influx	Impact on traffic road infrastructure	Traffic and Safety rules	Construction Operational	4	2	2	4	-Implement measures that ensure the adherence to traffic rules. -All vehicles must be road worthy. -Speed limit restriction of 40km/h -don't drink and drive should apply to all traffic and road users -alcohol Breathalyzer test must be conducted on daily bases to all personnel. Internal haul road should be maintained at all times and must be designed in such a manner that they encourage water run off during storm events -Dust abatement measures must be implemented	4	2	1	5

								along the roads to prevent dust pollution				
Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	Proliferation of alien vegetation	Alien and invasive vegetation	Construction Operation	8	4	2	4	-Minimise the footprint of transformation. -Encourage proper rehabilitation of mined areas. -Encourage the growth of natural plant species. -Mechanical methods (hand-pulling) of control to be implemented extensively. -Annual follow-up operations to be implemented	4	2	1	5
Clearing access track and drill sites - Demarcation of drill pad -Temporary drillers laydown -Temporary core yard for cutting and processing drilling - Diamond drilling	-Depletion of underground water - groundwater pollution	Underground water resource	Construction Operation	6	4	2	4	-Make all employees aware of water conservation/water demand management, water pollution avoidance and minimization measures reporting procedure and registry of incidents.	4	2	1	5

							<p>-Train all employees to reduce water consumption.</p> <p>-Make one (1) individual person at a management level responsible for the management of the overall mine water balance. Train departmental heads in the managing of water balance, water pollution and water conservation within their sectors.</p> <p>-Train all employees in the implementation of standard operating procedures (SOP's) (e.g. hydrocarbon management, sewerage plant management, monitoring and record keeping).</p> <p>-Arrangements shall be</p>				
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							<p>implemented to support water resources, aquatic environments, ecosystem services and conservation research efforts carried out by local, regional and national research groups in order to further knowledge and understanding of such attributes in the areas of operation.</p> <p>-Mechanisms shall be created and implemented to provide information and raise awareness among employees, customers and suppliers and other stakeholders to enhance knowledge and understanding of water resources, aquatic environments and</p>				
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								conservation issues. -Allow for a safe working environment -Implement a groundwater monitoring program, which includes: -Groundwater levels and quality;				
Entire prospecting period	Local community expectations and project benefits	Socio-economic	Construction Operation	6	2	3	5	-Implement the mitigation measures as proposed in this report. -As job creation is one of the most pressing socio-economic needs in the local community, Letso Investment Pty (Ltd)through the development of the project should focus on SMME development and related local job creation, whilst considering the limitations of the available local skills.	8	4	3	5

								<p>-Assistance in terms of skills development for those that would be employed during the start-up and construction phases of the project, as well as for permanent employees during the operational phase of the project would be necessary. Education is critical to sustain the socio-economic development of the community members living in the area. Continued support for training and capacity building thus remain important.</p> <p>-Possible SMME links to the project should be pursued to maximise local business benefits;</p> <p>-The establishment of a</p>				
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							<p>management and monitoring committee to deal with increased social pressure on the local area, as well as increased pressure on the infrastructure and services provision is recommended. Such a committee should not only consist of representatives of Letso Investment (Pty) Ltd, but all the mining companies operating in the area together with representatives from the Joe Molorong Local Municipality.</p> <p>-Letso Investment (Pty) Ltd should communicate and present their involvement in the community (goodwill, social responsibility, capacity building programmes, skills development,</p>				
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								general development support and so forth) to obtain community support. -Ensuring continued contact and communication between the Municipality, and the community leaders, as well as nearby landowners is critical during the entire prospecting process.				
Entire prospecting phases	Inadequate information dissemination to the community and stakeholders as well as engagement and cooperation	Interested and Affected Parties and general public	All prospecting phases	4	2	2	3	-Maintain active communication with IAPs. -IAPs must be kept up to date on any changes in the prospecting operation. -A complaints management system (register) should be maintained to ensure that all issues raised by community members are	10	5	2	5

								followed up and addressed appropriately.				
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B. 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 - attach copies of specialist reports as appendices)

The following Specialist Studies were conducted;

- Ecological Study.
- Archaeological and Cultural Heritage Study.

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11.Environmental impact statement

a) Summary of the key findings of the environmental impact assessment

Potential impacts which cannot be adequately mitigated are considered key findings of the environmental impact assessment. Due to the limited extent of the areas to be cleared, limited temporary infrastructure required, temporary nature of the activities, the fact that there are no areas of environmental significance located within the prospecting area, and the fact that their water feature is non-perennial and adjacent within 100meters of the proposed prospecting area, the potential impacts are considered to be of medium significance before the implementation of mitigation measures. Therefore, none of the potential impacts are considered key findings. Mitigation measures will be applicable to the drilling sites identified as a result of Phase 1 prospecting activities and will therefore still ensure that the significance of the potential impacts remains low by, for example, having plastic lining to ensure that there is no surface impact from the drilling program in the form of hydrocarbon spills on the soil. Drilling activities will also utilise biodegradable and environmentally acceptable drilling fluids.

b) 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)

There are no areas of environmental sensitivity on the site or areas that should be avoided and their buffer zones. Sensitivity features are outside the boundary of the study area.

c) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

Negative impacts

The potential impacts of the planned invasive prospecting activities (drilling) are listed below:

Vegetation clearing and minor earth moving activities for drill hole areas and access tracks may result in the following impacts:

- Dust generated from activities.
- Damage to buried archaeological or paleontological resources of significance (Low-medium potential as preliminary screen tool report demonstrate the sensitivity of such features within the proposed prospecting study area).
- Leaks from vehicles and machinery on site, inadequate hydrocarbon handling and storage, inadequate waste management and spills from ablutions may result in the following impact:
- Contamination of soil (limited potential as mitigation strategies to avoidance for soil contamination would have been put in place).
- The presence of vehicles and machinery as well as personnel on site for drilling activities may result in the following impacts:
 - Noise.
 - Compaction of soil and subsequent negative impact on vegetation re-establishment.
 - Disturbance of flora and fauna.
 - Traffic influx and associated impacts on existing roads
 - Erosion
 - Visual impacts on farm dwellers.
 - Land degradation for agricultural purposes
 - Underground pollution.

Positive impacts

The prospecting activities being applied for are required in order to investigate the presence of suitable mineralisation and, if so, whether this mineralisation can be economically and feasibly mined in future which, in turn, presents various socio-economic benefits to the region

d) 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 environmentally sustainable prospecting operation, remediation or elimination of environmental impacts through the implementation of mitigation measures as legislatively required.

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

- Minimizing of vegetation loss caused by construction and site maintenance:
- Vegetation clearing control
- Rip and rehabilitation of unnecessary compacted areas
- Adherence to roads
- Implementation of a no collection and no open fire policy
- Prevention of soil pollution due to chemical spillage
- Regular maintenance of earth moving equipment and machinery.
- Inspection on chemical containing activities against faults and leaks.
- Immediate rehabilitation of an affected area.
- Suitable disposal of contaminated soil.
- Reduction of noise levels caused by machinery, mineral processing and earth moving equipment.
- Undue noise levels will be kept to acceptable hours.
- Modification of earth moving equipment to reduce noise levels.
- Aim to keep noise levels within the approved prescribed standards.
- Minimization of dust upliftment causing loss of air quality.
- Watering of the dirt roads and vegetation cleared areas.
- Adherence to speed limit.
- Surface and ground water quality degradation
- Adherence to water management guidelines
- Specific water facility construction.
- Storm water control.
- Measurement of water level and quality.
- Implementation of ground water monitoring system.
- Waste disposal
- Implementation of waste disposal facilities
- Contractual agreements for waste removal.
- Waste removal schedules,
- Compliance to good housekeeping rules.
- Environmental awareness training on Fauna and Flora
- Proper waste management
- Specific work-related safety awareness,

12. Aspects for inclusion as conditions of Authorisation

(Any aspects which must be made conditions of the Environmental Authorisation)

At this stage all aspects that must be included into the environmental authorization are detailed in this document. Should any aspects arise that needs to be made conditions of this document will be updated accordingly and will be submitted to the relevant departments.

The terms and conditions for surface access to the prospecting area between the applicant and affected landowners must be finalised prior to the commencement of invasive prospecting activities. Rehabilitation and closure must be undertaken as per the closure plan

13. Description of any assumptions, uncertainties and gaps in knowledge (which relate to the assessment and mitigation measures propose

Information to characterise the baseline environment was obtained from available desktop sources in the public domain, evidenced during a site visit and screen tool report. It is assumed that this information accurately reflects the current conditions of the prospecting area, aside from those aspects where information is outdated and is stated as such in the baseline description. It is, however, not considered that this data will alter the findings or outcomes of any potential impact identified nor the management measures proposed.

Any assumptions, uncertainties and gaps in knowledge that could arise during the operation of the prospecting activities will be addressed and mitigation measures implemented to prevent any damage to the environment. Such assumptions, uncertainties and gaps in knowledge will be described, implemented and handed to the relevant department.

14. Reasoned opinion as to whether the proposed activity should or should not be Authorised

a) Reasons why the activity should be authorized or not

The proposed prospecting operations should be strongly considered for authorisation as the development of the prospecting operations will result in the upliftment of the community in future. Furthermore, the findings of the impact assessment indicate that prospecting activities will not result in any significant social or environmental impacts. No fatal flaws were identified; therefore, there are no reasons why the activities should not be authorized.

b) Conditions that must be included in the authorisation

Specific conditions to be included into the compilation and approval of the BAR and the EMPr are adherence to all mitigation measures as stipulated within the EMPr.

c) Rehabilitation requirements

Rehabilitation requirements should include, but not limited to the following:

- The area must be rehabilitated as close as possible to its original natural state.
- Rehabilitation must be done to the complete satisfaction of all relevant departments.
- Where necessary, a soil bed must be provided and sown with indigenous plant species to ensure re-establishment and the elimination of invader/pioneer plant species.
- All other rehabilitation measures as contained within the EMPr mitigation measures, inclusive must be adhered to or a grounded reason why any of these are not met must be provided.

15. Period for which the Environmental Authorisation is required

The period for which authorisation is required will be for a period of five (5) years

16. Undertaking

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

The undertaking in the EMP is applicable to both the BAR (this section, Part A) and the EMP (Part B) which will be included on the final Basic Assessment Report

17. Financial Provision

(state the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation)

As per Regulation 6(3) of the NEMA Regulations on Financial Provision (GNR1147 of 2015) the determination of the quantum for rehabilitation-related financial provision will be included in the EMP (Part B).

The total financial provision for the invasive prospecting activities proposed for the prospecting activities as per the submitted prospecting work programme is: **R62 231,00** (value as per date of assessment - 2019).

a) Explain how the aforesaid amount was derived

As seen from the table below, the amount of **R62 231,00** was calculated using the Department of Mineral Resources approved Financial Provision Quantum table. **(Attached as Appendix 5)**

b) Confirm that this amount can be provided for from operating expenditure

(confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be)

Financial Provision is provided for as a regulatory cost, totalling **R62 231,00** (under the rehabilitation cost category) in the Prospecting Work Programme.

18. Specific Information required by the Competent Authority

a) 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 report must include the: -

i. 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 an appendix)

The community of Madibeng village is situated approximately 4km apart from the proposed prospecting study area under the Chief custodianship of the traditional authority of Kgosi Otladisa Seno. At present, the landowners (Traditional Authority) of the farms indicated in the prospecting application would therefore be the only directly affected parties. It is required that a suitable agreement will be drawn up between the applicant and the landowners for the activities proposed.

As the farm/property is communal owned under local traditional authority ownership, the proposed activities will greatly assist the community within the Madibeng community. The prospecting activities will contribute to the local economy due to its impact on job creation, total disposable income and value-added activities in mid-long-term bases. Five measures of economic impacts can be used to demonstrate the potential positive effect of the proposed prospecting operation on the local economy:

- Employment- the extent of employment can be measured as the number of jobs or in terms of full-time job equivalents;
- Payroll income – the gross remuneration of employees in terms of salaries and wages;
- Capital Expenditure (CAPEX) – the total amount spent on the purchasing of fixed assets and total spent on construction;
- Operating expenditure and maintenance (OPEX) – the total amount spent locally by businesses on goods and services, excluding salaries and wages as well as rent or interest;
- Revenue- the total value of sales arising from the business activity at the operation.

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

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

Sites of archaeological and cultural heritage significance may likely or unlikely be present in the area as highlighted on the study that indicate the presence of potential buried artefacts or any other matter of historical significance that required preservation. However, there is always a chance that buried artefacts may be unearthed during vegetation clearing and minor earth moving activities. The potential impact is only applicable during vegetation clearing and earth moving activities. The potential impact can be mitigated by implementing a chance finds procedure (as detailed in Table 2 in the EMPr - Part B of this document) to prevent damage to buried resources which may be of significance, in the unlikely event that they are unearthed. The significance of the potential impact on buried artefacts is low prior to and after the implementation of the recommended mitigation measure.

b) 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)

Motivation for why alternatives were not considered has been included in Section 3(f). This DBAR addresses the following requirements in terms of sections 24(4)(a) and (b) of the Act

SECTION OF NEMA	CONTENTS	DESCRIPTION OF HOW THE ASPECT HAS BEEN ADDRESSED
24(4)(a)	Procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment – must ensure, with respect to every application for an environmental authorisation—	Refer to Section 6(a) for the methodology used for the assessment of impacts
24(4)(a)(i)	Coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state;	The 2 nd DBAR / EMPr will be made available to all the relevant organs of state: local and district municipality, Northern Cape Department of Environment and Nature Conservation; Northern Cape Department of Agriculture Land

		Reform and Development; Department of Mineral Resources; Department of Water and Sanitation; Department of Forestry, Fisheries and Environment, COGHSTA, Joe Molorong Local Municipality, John Taolo Gaetsewe District Municipality. The DMRE remains the Competent Authority.
SECTION OF NEMA	CONTENTS	DESCRIPTION OF HOW THE ASPECT HAS BEEN ADDRESSED
24(4)(a)(ii)	That the findings and recommendations flowing from an investigation, the general objectives of integrated environmental management laid down in this Act and the principles of environmental management set out in section 2 are taken into account in any decision made by an organ of state in relation to any proposed policy, programme, process, plan or project	The general objectives and the principles of environmental management were addressed in the EMP - Part B of this document.
24(4)(a)(iii)	That a description of the environment likely to be significantly affected by the proposed activity is contained in such application;	Refer to Section 5(a) for a detailed description of the baseline environment likely to be affected by the project.
24(4)(a)(iii)	That a description of the environment likely to be significantly affected by the proposed activity is contained in such application;	Refer to Section 5(a) for a detailed description of the baseline environment likely to be affected by the project.
24(4)(a)(iv)	Investigation of the potential consequences for or impacts on the environment of the activity and assessment of the significance of those potential consequences or impacts; and	Refer to Section 3(g) for the assessment of the potential impacts.
24(4)(a)(v)	Public information and participation procedures which provide all interested and affected parties, including all organs of state in all spheres of government that may have jurisdiction over any aspect of the activity, with a reasonable opportunity to participate in those information and participation procedures; and	Refer to Section 4 which details the public participation process followed.
24(4)(A)	Where environmental impact assessment has been identified as the environmental	Basic Assessment has been identified

	instrument to be utilised in informing an application for environmental authorisation, subsection (4)(b) is applicable	as the environmental instrument therefore (4)(b) is applicable.
Section 24(4)(b)		
24(4)(b)	Must include, with respect to every application for an environmental authorisation and where applicable—	
24(4)(b)(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;	Motivation for why alternatives were not considered, as well as the options of not implementing the activity have been addressed in Section 3(f).
24(4)(b)(ii)	Investigation of mitigation measures to keep adverse consequences or impacts to a minimum;	Mitigation measures for potential impacts have been identified. Refer to Section 4 of the EMP - Part B of this document
24(4)(b)(iv)	Reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information;	The gaps have been identified. Refer to Section 10 of the EMP - Part B of this document.
24(4)(b)(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;	Management and monitoring measures have been specified in the EMP - Part B of this document. Implementation and suitability of the EMP will be audited every second year as required by Regulation 55 of the MPRDA as well as per the frequency indicated in the Environmental Authorisation as per of Regulation 34 of the NEMA EIA Regulations, 2014.
24(4)(b)(vii)	Provision for the adherence to requirements that are prescribed in a specific environmental management Act relevant to the listed or specified activity in question.	Listed activities for the project have been identified. Refer to Section 3(a). Basic Assessment has been identified as the environmental instrument in terms of NEMA. An AEL is not required as per NEMAQA. A WML is not required as per NEMWA. Permits may be required as per NEMBA in the unlikely event that species

		of conservation concerns are identified and require relocation should avoidance through locating alternative drill sites not be possible. The area does not fall within a protected area as per NEMPAA. A WUL is required.
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PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1.1 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)

The details and expertise of the EAP are already included in Part A, Section 1(a) but are also included below as required.

1.2 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)

The aspects of the activity that are covered by the EMP are already included in detail in Part A, Section (1)(h) herein as required.

1.3 Composite map

(Provide a map 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)

There are no areas of environmental sensitivity on the site or areas that should be avoided and their buffer zones.

1.4 Description of Impact management objectives including management statements.

1.4.1 Determination of closure objectives

(Ensure that the closure objectives are informed by the type of environment described)

The main objective will be to rehabilitate- and return the borehole drill areas, access tracks and any areas affected as a result of invasive prospecting activities (including temporary infrastructure) to resemble the surrounding landscape with no remaining infrastructure or potential hazards to people or the environment. Further environmental objectives include:

- Ensure that no temporary infrastructure is left on-site and ensure environmental and safety risks are minimised;
- Rehabilitate areas disturbed by prospecting activities (drill sites and access roads);
- Rehabilitated drill sites and access paths must not pose a safety hazard to humans and animals;
- Limit to the greatest extent possible the clearing of vegetation during prospecting activities;
- Establish a self-sustaining and stable vegetation cover over the area disturbed by the prospecting activities, if necessary, by ripping and re-seeding using an appropriate indigenous seed-mix to promote the rehabilitation of the affected area to coincide with the surrounding and cover;
- Minimise the further establishment of alien vegetation at rehabilitated drill sites;
- Ensure the rehabilitated drill sites are free draining; and
- Ensure adherence to local, provincial and national regulatory requirements.

- The closure plan would provide specific goals for each of the above-mentioned aspects to achieve the main closure objective.

1.4.2 Volumes and rate of water use required for the operation

The estimated water use required per day is approximately 5 000 litres per. The water use license application is underway.

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1.4.3 Impacts to be mitigated in their respective phases

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

ACTIVITIES	POTENTIAL IMPACT	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<ul style="list-style-type: none"> - Clearing access track and drill sites - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling - Percussion drilling -Trenching 	Loss of vegetation (Possible plant species of conservation concern) from clearing or harvesting by personnel or uncontrolled fires set by personnel	Operational (Phase 2 - Drilling)	<ul style="list-style-type: none"> -Access track to drill sites (assumed existing tracks will be used -trenching (4 trenches with 2m long x 2m depth x 2m wide) 	Where possible available access tracks will be used - Drill sites should be evaluated by the ECO prior to any clearing activities in order to determine the presence of any sensitive, protected or indigenous species and to advise permitting requirements in terms of the NFA, NCNCA or NEMBA. - When visiting drill sites, the ECO will take a before photo that will be	Permits may be required as per NCNCA, NFA and NEMBA in the unlikely event that species of conservation concern is identified and require relocation should avoidance through locating alternative drill sites not be possible.	Operational (Phase 2- Drilling)
	Loss of animal species as a result of collisions with vehicles or hunting and trapping by personnel		N/A			

				<p>compared with an after photo that the ECO will take once</p> <ul style="list-style-type: none"> -Re-evaluate spatial extent and layout of proposed drill-site in order to avoid plant species of conservation concern (in the unlikely event that they are present) - Where avoidance is not possible, the necessary permits / licenses must be sought in terms of the NFA / NCNCA / NEMBA before any clearance activities are- <p>Areas to be cleared will be limited to the minimum extent possible</p> <ul style="list-style-type: none"> - Avoid clearing trees - No harvesting of plants or 	
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				<p>hunting and trapping of animals must be allowed</p> <ul style="list-style-type: none"> - No uncontrolled fires must be allowed - Intervening by planting indigenous vegetation in disturbed areas should natural revegetation proves unsuccessful 		
	Proliferation of alien vegetation					Operational Phase (2)
	Noise from drilling activities may result in nuisance			<p>Maintaining equipment and machinery in good working order</p> <ul style="list-style-type: none"> - Switching off equipment when not in use 	Ambient noise levels unlikely to increase above the typical rating level for rural districts (SANS 10103:2008)	Operational Phase (2)
	Damage to buried archaeological or or paleontological resources			<ul style="list-style-type: none"> - Implement a chance finds procedure as detailed in 	In the unlikely event that artefacts are unearthed they	Operational Phase 2

	of significance			Table 2	must be dealt with according to the provisions of the NHRA	
	Dust generated may result in nuisance impacts			- Areas to be cleared will be limited to the minimum extent possible - Wet suppression must be implemented where dust plumes are noted	Dust generated likely to fall below the threshold as per the NEMAQA National Dust.	
Clearing access track and drill sites - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling - Percussion drilling - trenching	Heavy vehicles and machinery on site may result in potential hydrocarbon leaks which may in turn pollute soil		-Access track to drill sites (Assumed existing tracks will be used -trenching (4 trenches with 2m long x 2m depth x 2m wide) -laydown (10m x 10m) - Diamond drilling (8 holes) at 50m deep -Percussion drilling (8 holes) 50m deep	Implementing spill prevention measures such as handling and storing hydrocarbons on impermeable surfaces -Adequately maintaining vehicles and machinery to prevent leaks - Cleaning any spills immediately - Plastic lining of sumps to capture the biodegradable drilling fluid	N/A	Operational Phase 2

	<p>Heavy vehicles and machinery on site may result in soil compaction subsequently impacting vegetation reestablishment</p> <p>Waste spills may result in pollution of soil</p>	Operational Phase (2)		<ul style="list-style-type: none"> - Cleaning any spills immediately - Implementing adequate waste management practices 	N/A	
				<ul style="list-style-type: none"> - Minimising areas to be disturbed by vehicle and machinery, - Ripping and profiling compacted soil 	N/A	
<p>Clearing access track and drill sites</p> <ul style="list-style-type: none"> - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling - Percussion drilling - Trenching 	Ground water contamination as a result of prospecting activities	Operational Phase (2)	<ul style="list-style-type: none"> - Access track to drill sites (Assumed existing tracks will be used - trenching (4 trenches with 2m long x 2m depth x 2m wide) - laydown (10m x 10m) - Diamond drilling (8 holes) at 50m deep - Percussion drilling (8 holes) 50m deep 	<ul style="list-style-type: none"> - Make one (1) individual person at a management level responsible for the management of the overall mine water balance. Train departmental heads in the managing of water balance, water pollution and water conservation within their sectors. - Train all employees in the implementation of standard operating 	<ul style="list-style-type: none"> - Compliance in terms of water act 36 of 1998 - Ensure to comply with the water use license conditions - Independent water use auditor should undertake audits every semester. 	Operational Phase 2

				<p>procedures (SOP's) (e.g., hydrocarbon management, sewerage plant management, monitoring and record keeping).</p> <p>-Implement a groundwater monitoring program, which includes:</p> <p>-Groundwater levels and quality</p>		
<p>Clearing access track and drill sites</p> <ul style="list-style-type: none"> - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling -Percussion drilling -Trenching 	Erosion	Operation Phase (2)	<ul style="list-style-type: none"> -Access track to drill sites (Assumed existing tracks will be used -trenching (4 trenches with 2m long x 2m depth x 2m wide) -laydown (10m x 10m) - Diamond drilling (8 holes) at 50m deep -Percussion drilling (8 holes) 50m deep 	Implement Erosion Mitigation Measures	N/A	Operational Phase (2)
Clearing access track and drill sites	Visual	Operation phase (2)	<ul style="list-style-type: none"> -Access track to drill sites (Assumed 	Implement measures to reduce visual impact on the	N/A	Operational Phase(2)

<ul style="list-style-type: none"> - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling - Percussion drilling - Trenching 			<p>existing tracks will be used</p> <ul style="list-style-type: none"> -trenching (4 trenches with 2m long x 2m depth x 2m wide) -laydown (10m x 10m) - Diamond drilling (8 holes) at 50m deep -Percussion drilling (8 holes) 50m deep 	<p>surrounding neighbouring farms</p>		
<p>Clearing access track and drill sites</p> <ul style="list-style-type: none"> - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling -Percussion drilling -Trenching 	<p>Geology</p>	<p>Operational phase (2)</p>	<ul style="list-style-type: none"> -Access track to drill sites (Assumed existing tracks will be used -trenching (4 trenches with 2m long x 2m depth x 2m wide) -laydown (10m x 10m) - Diamond drilling (8 holes) at 50m deep -Percussion drilling (8 holes) 50m deep 	<ul style="list-style-type: none"> -Ensure that optimal use is made of the available mineral resource through proper planning. - The targets should be delineated first and all infrastructure positions should be selected with the main aim of avoiding sterilization of future resources 	<p>N/A</p>	<p>Phase 1</p>

<p>Clearing access track and drill sites</p> <ul style="list-style-type: none"> - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling -Percussion drilling -Trenching 	<p>Topography</p>	<p>Operational phase (2)</p>	<p>-Access track to drill sites (Assumed existing tracks will be used</p> <p>-trenching (4 trenches with 2m long x 2m depth x 2m wide)</p> <p>-laydown (10m x 10m)</p> <p>- Diamond drilling (8 holes) at 50m deep</p> <p>-Percussion drilling (8 holes) 50m deep</p>	<p>-Backfill all drilling excavations continuously with overburden and waste bricks, if possible, otherwise when they become available;</p> <p>-Employ effective concurrent rehabilitation strategies to restore surface topography of excavations on the drilling and the plant site;</p> <p>-Stabilise the residue deposits;</p> <p>-All infrastructure (including the small drill camp) should be demolished during closure.</p>	<p>N/A</p>	<p>Phase 2</p>
<p>Clearing access track and drill sites</p> <ul style="list-style-type: none"> - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling -Percussion drilling -Trenching 	<p>Land Capability and Land Use</p>	<p>Phase 2</p>	<p>-Access track to drill sites (Assumed existing tracks will be used</p> <p>-trenching (4 trenches with 2m long x 2m depth x 2m wide)</p> <p>-laydown (10m x</p>	<p>-Ensure that optimal use is made of the available land through consultation with land owner and proper planning of mining activities.</p> <p>-Surface agreement or purchase agreement to be</p>	<p>N/A</p>	<p>Phase 2</p>

			<p>10m) - Diamond drilling (8 holes) at 50m deep -Percussion drilling (8 holes) 50m deep</p>	<p>signed with land owners. -Employ effective rehabilitation strategies to restore land capability and land use potential of the farm. -All activities to be restricted within the demarcated areas. -Ensure that land which is not used during construction is made available for grazing farming.</p>		
Traffic and road safety	-Traffic influx -danger to animals	Phase 1 Phase 2	<p>-Access track to drill sites (Assumed existing tracks will be used -trenching (4 trenches with 2m long x 2m depth x 2m wide) -laydown (10m x 10m) - Diamond drilling (8 holes) at 50m deep -Percussion drilling (8 holes) 50m deep</p>	<p>-Implement measures that ensure the adherence to traffic rules. -• The establishment of a management and monitoring committee to deal with increased social pressure on the local area, as well as increased pressure on the infrastructure and services provision is recommended</p>	Compliance with National Road Traffic Act 93 of 1996	Phase 1 Phase 2

Letso Investment Prospecting project	Interested and affected parties	Pre-Prospecting and Post-Prospecting	Entire duration of the project	<p>-The establishment of a management and monitoring committee to deal with increased social pressure on the local area, as well as increased pressure on the infrastructure and services provision is recommended</p> <p>-IAPs must be kept up to date on any changes in the prospecting operation.</p> <p>-A complaints management system (register) should be maintained by the mine to ensure that all issues raised by community members are followed up and addressed appropriately.</p>		Entire duration of the project
Socio-economic	Impact of the project in the local community	Pre-Prospecting and Post-Prospecting	Entire duration of the project	-Assistance in terms of skills development for those that would be employed during the start-up and operation phases of	N/A	Entire duration of the project

				<p>the project, as well as for permanent employees during the operational phase of the project would be necessary. Education is critical to sustain the socio-economic development of the community members living in the area. Continued support for training and capacity building thus remain important.</p>		
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1.4.4 Impact management outcomes

(a description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated)

ACTIVITIES	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE IN WHICH IMPACT ANTICIPATED IS	MITIGATION MEASURES	STANDARDS TO BE ACHIEVED
track and drill sites - Demarcation of drill pad - Temporary drillers laydown - Temporary core yard for cutting and processing drilling - Diamond drilling	Loss of vegetation from clearing or harvesting by personnel or uncontrolled fires set by personnel Loss of animal species as a result of collisions with vehicles or hunting and trapping by personnel	Biodiversity	(Phase 2 - Drilling)	-Where possible available access tracks will be used - Drill sites should be evaluated by the ECO prior to any clearing activities in order to determine the presence of any sensitive, protected or indigenous species and to advise permitting requirements in terms of the NFA, NCNCA or NEMBA. - When visiting drill sites, the ECO will take a before photo that will be compared with an after photo that the ECO will take once - Avoid all indigenous species, protected trees and other	Prevent loss of plant species of conservation concern and minimise disturbance to habitat and fauna as per the management plan in Section 4(f) below

				<p>plant species of conservation concern by changing the spatial layout / extent of drill sites accordingly prior to clearing</p> <ul style="list-style-type: none"> - Where avoidance is not possible, the necessary permits / licenses must be sought in terms of the NFA / NCNCA / NEMBA before any clearance activities are permitted. - Areas to be cleared will be limited to the minimum extent possible - Avoid clearing trees - No harvesting of plants or hunting and trapping of animals must be allowed - No uncontrolled fires must be allowed - Intervening by planting indigenous vegetation in disturbed areas should 	
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				natural revegetation proves unsuccessful and/or as per landowner agreements	
	Noise from drilling activities may result in nuisance	Noise; Social		- Maintaining equipment and machinery in good working order - Switching off equipment when not in use	Avoid disturbance of surrounding residents by implementing measures as per the management plan in Section 4(f) below; noise likely to be in line with standards (SANS 10103:2008)
	Damage to buried archaeological or or paleontological resources of significance	Heritage; Social		- Implement a chance finds procedure as detailed in Table 2	Prevent damage to archaeological resources by implementing measures as per the management plan in Section 4(f) below; in the unlikely event that artefacts are unearthed they must be dealt with according to the provisions of the NHRA
	Dust generated may result in nuisance impacts	Air quality; Social	Phase 2	- Areas to be cleared will be limited to the minimum extent possible - Wet suppression must be implemented where dust	Prevent excessive dust by implementing measures as per the management plan in Section 4(f) below; dust generated likely to fall below the threshold as per the NEMAQA

				plumes are noted	National Dust Control Regulation Standards for residential areas
	Heavy vehicles and machinery on site may result in potential hydrocarbon leaks which may in turn pollute the soil	Soil; Biodiversity; Groundwater	Phase 2	<ul style="list-style-type: none"> - Implementing spill prevention measures such as handling and storing hydrocarbons on impermeable surfaces - Plastic lining sumps - Adequately maintaining vehicles and machinery to prevent leaks - Cleaning any spills Immediately 	Prevent contamination of soil by implementing measures as per the management plan in Section 4(f) below
	Heavy vehicles and machinery on site may result in soil compaction subsequently impacting vegetation reestablishment	Soil	Phase 2	<ul style="list-style-type: none"> - Minimising areas to be disturbed by vehicle and machinery, - Ripping and profiling compacted soil - Intervening by planting indigenous vegetation in disturbed areas should natural revegetation proves unsuccessful and /or as per landowner agreements 	Prevent or repair compaction of soil by implementing measures as per the management plan in Section 4(f) below to ensure that there are no negative impacts of vegetation reestablishment

	Waste spills may result in pollution of soil	Soil	Phase 2	- Cleaning any spills immediately - Implementing adequate waste management practices	Prevent contamination of soil by implementing measures as per the management plan in Section 4(f) below
	land degradation and loss of top soil may results due to erosion	Soil	Phase 2	Implement erosion control measures	-Prevent loss of topsoil -loss of soil fertility - land degradation
	The prospecting activity together with associated infrastructure may have negative visual impact on the surrounding environment	Social	Phase 2	Implement measures to prevent visual impact on residing farm occupants and neighbouring farms	To Reduce the visual impact on the surrounding farms.
	Sterilisation of the minerals	Geology	Phase 2	Ensure that optimal use is made of the available mineral resource through proper planning. - The targets should be delineated first and all infrastructure positions should be selected with the main aim of avoiding sterilization of future resources	Enhance the prospecting activity for manganese and iron ore by proper planning
	The prospective activity may potentially alter the topography of the study area	Topography	Phase 2	-Implement rehabilitation measures to restore the prospecting area to its original state. -	To prevent to topographic changes

	<ul style="list-style-type: none"> -Traffic Influx -safety risk -animal injuries or mortality as a result of traffic movement 	Road and safety risk	Phase 1 Phase 2 Phase 3	<ul style="list-style-type: none"> -Implement measures that ensure the adherence to traffic rules. -The establishment of a management and monitoring committee to deal with increased social pressure on the local area, as well as increased pressure on the infrastructure and services provision is recommended 	To ensure compliance on traffic and safety regulations for the proposed project
Socio economic	Impact of the project in the local community	Local Economy SA GDP	Phase 1 Phase 2 Phase 3	<ul style="list-style-type: none"> -Assistance in terms of skills development for those that would be employed during the start-up and operation phases of the project, as well as for permanent employees during the operational phase of the project would be necessary. Education is critical to sustain the socio-economic development of the community members living in the area. Continued support for training and capacity building thus remain important. 	<ul style="list-style-type: none"> -Boast the local economy in the long run -Contributes to SA GDP over a long term -Contribute to Tax revenue on a long run

I and AP	Ensuring engagement will all parties during the duration of the project	-community -I&APs	Phase 1 Phase 2 Phase 3	<p>-The establishment of a management and monitoring committee to deal with increased social pressure on the local area, as well as increased pressure on the infrastructure and services provision is recommended</p> <p>-IAPs must be kept up to date on any changes in the prospecting operation.</p> <p>-A complaints management system (register) should be maintained by the mine to ensure that all issues raised by community members are followed up and addressed appropriately.</p>	-ensuring that all parties are kept abreast and updated regarding any development or stages of the project
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The table below details the management plan to be implemented to manage the potential impacts of the proposed prospecting activities.

An Environmental Control Officer

MANAGEMENT AREA	ASPECT	MANAGEMENT MEASURE	RESPONSIBLE PARTY
Awareness	Soil; Biodiversity; Groundwater; Heritage; Social	Environmental awareness training must be implemented as per the environmental awareness plan, educating personnel and contractors on how to interact with the environment and landowners	ECO
		As part of environmental awareness training, personnel and contractors must be educated regarding the possible presence of subterranean archaeological and/u854or paleontological sites, features or artefacts and be advised of the penalties associated with the unlawful removal of these artefacts, as set out in the NHRA as well as of this chance finds procedure.	
Chance finds procedure	Heritage	If any buried archaeological or palaeontological findings are discovered during clearing activities, the excavation must stop and the ECO must be notified immediately. The ECO must then contact SAHRA to investigate the findings.	ECO / SAHRA ECO/ Archaeologist / Palaeontologist
		The ECO must contact an archaeologist and/or palaeontologist, depending on the nature of the find, to assess the importance and rescue them if necessary (with the relevant SAHRA permit). No work may be resumed in this area without the permission from the ECO and SAHRA. Under no circumstances shall any artefacts be removed, destroyed or interfered with	
		Any mitigation or management measures recommended by the specialist, after assessment of the find, must be implemented.	
Vegetation clearing	Air quality; Biodiversity; Soil	Vegetation clearing must be limited to the smallest extent possible.	ECO
		Where possible available access tracks must be used.	
Dust	Air quality	Wet suppression must be implemented where dust plumes are noted.	ECO
Topsoil Clearing	Soil	When excavating separate pits for waste water, grease and oil polluted water, any topsoil and subsoil must be stored separately.	ECO

Floral species of conservation concern	Biodiversity	Once SNM Resources has confirmed the location of any drill-sites, access tracks or exploration boreholes, the ECO must survey all potential areas to be for the presence of any indigenous or protected plant or animal species, including protected trees, from those described in the baseline environmental section of this report. The site team will then evaluate the potential to minimise or avoid the disturbance of any indigenous or protected species by altering the exact position and spatial layout for that drill site. Should it still be required that species must be removed, the ECO should seek assistance from a botanical specialist knowledgeable of the NCNCA and the NFA to confirm any preliminary findings and to assist. SNM Resources is to apply for the necessary permits for the removal of any indigenous vegetation or protected species which cannot be avoided, from the relevant Department. No ground clearance activities can be commissioned without such prior evaluation and the necessary permits being obtained in terms of the NCNCA, the NFA and the National Environmental Management: Biodiversity Act, No. 10 of 2004.	ECO ECO
Trapping of fauna	Biodiversity	No trapping or hunting of any faunal species must be allowed.	
Fires		Uncontrolled fires must not be allowed.	
Rehabilitation		Natural revegetation will likely occur. Where drill sites have been denuded, the surface shall be ripped or ploughed. Access tracks shall be ripped or ploughed. Disturbed areas must be inspected after a growing season has passed and should natural revegetation prove unsuccessful areas must be revegetated using indigenous vegetation species. Timing of revegetation / reseeded to be agreed on in landowner agreement.	
Hydrocarbon management		Handle and store hydrocarbons on impermeable surfaces. Hydrocarbons must be stored in a banded area with a capacity to contain 110 % of the total volume stored.	
		Implement systematic maintenance of all forms of equipment and vehicles to prevent leaks	
		Refuel machinery and vehicles over drip trays.	

		Conduct any machinery and vehicle maintenance on impermeable surfaces.	
		Pits for waste water, grease and oil polluted water must be plastic lined to prevent pollution. Upon completion of drilling, the contents of the pit (including the spent plastic liner) must be disposed of at a licensed disposal facility.	
Waste management	Soil	Ensure that an adequate number of waste bins are available on site. Waste must be stored in a manner that it cannot be washed or blown into the environment	
		The active drill site must be cleaned daily and litter removed and deposited in the bins provided.	
		No waste is permitted to be buried or burned on site. Waste must be collected and disposed of at a licensed disposal facility.	
		Portable toilets are to be provided and maintained in a manner which prevents spills. Under no circumstances may ablutions occur outside of the provided facilities	
Spills	Soil	Clean any spills immediately according to the MSDS using spill kits which must be kept on site.	
Compaction	Air quality	Low vehicle speeds must be enforced on unpaved surfaces to minimise dust.	
	Noise; Social	Limit idling and switch off equipment when not in use.	
		Implement systematic maintenance of all forms of equipment and vehicles to minimise noise.	
Complaints		Introduce a mechanism whereby complaints from stakeholders can be received and responded to.	ECO
Agreements		Prior to any activities being undertaken on any property entailed in the Prospecting Right Application, SNM Resources must be in possession of a landowners' agreement.	
Health and safety		Adhere to agreements made with landowners.	
		Ensure that operations are in line with the requirements of the MHSA and Regulations.	

1.4.7 OTHER MITIGATION MEASURES NOT LISTED WITH LISTED ACTIVITIES

- Vehicles will be equipped with a red flag on a long enough rod to be easily observed by the heavy vehicle drivers and a roll bar
- Personnel will need to be trained on health and safety matters in line with the Health and Safety Act for mining and in the handling and remediation of chemical spills, fire and first aid
- Daily checking of oil/diesel leakages before any vehicle is operated
- Domestic waste containers will be installed and clearly marked for this purpose
- Waste storage containers shall be covered, tip-proof, weather proof and scavenger proof
- The waste storage area shall be fenced off to prevent windblown litter
- The mine shall ensure that all facilities are maintained in a neat and tidy condition and the site shall be kept free of litter
- No burning, on site burning or dumping of waste shall occur
- Contracts with the local municipality / agencies will be signed for the removal of waste containers on an appropriate schedule of once a week, but if found necessary twice a week
- Access road maintenance throughout the entire project timeframe
- All mine roads will be cleared of foreign materials and ripped to loosen the ground for vegetation re-growth for rehabilitation purposes

1.4.8 Financial Provision

1.4.8.1 Determination of the amount of Financial Provision

Section 24(P)(1) of NEMA states that an Applicant for an environmental authorisation relating to mining or related activities on a mining area must make the prescribed financial provision for the rehabilitation, management and closure of environmental impacts, before the Minister responsible for mineral resources issues the environmental authorisation.

In order to ensure that the Applicant provides sufficient funds for the total quantum to cover the rehabilitation, management and remediation of negative residual environmental impacts, the quantum for closure-related financial provision in terms of Regulation 4 of the NEMA Regulations on Financial Provision (GNR1147 of 2014) has been determined.

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

The main closure objective is to create a post-operational environment through extensive rehabilitation to such an extent that it closely represents the original undisturbed environment.

CLOSURE OBJECTIVES	EXTENT TO WHICH ALIGNED TO BASELINE ENVIRONMENT
Developing a landform that is free draining, with established, self-sustaining vegetation	The topography of rehabilitated drill sites will be shaped to be <ul style="list-style-type: none"> • free draining to represent the baseline state. • Natural revegetation will likely occur. • Disturbed areas must be inspected after a growing season has passed and should natural revegetation prove unsuccessful areas • must be revegetated using indigenous vegetation species. • Alien vegetation must be removed.
Rehabilitate and return the drill hole areas to a capability that is in line with the surrounding landscape.	<ul style="list-style-type: none"> • Natural revegetation will likely occur. • Disturbed areas must be inspected after a growing season has passed and should natural revegetation prove unsuccessful areas • must be revegetated using indigenous vegetation species.
Rehabilitated areas do not pose a safety hazard to humans and animals.	<ul style="list-style-type: none"> • Backfilling of any excavations • No temporary infrastructure is to be left on-site. • All waste will be removed.

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

The main objective will be to rehabilitate- and return the borehole drill areas, access tracks and any areas affected as a result of invasive prospecting activities (including temporary infrastructure) to resemble the surrounding landscape with no remaining infrastructure or potential hazards to people or the environment.

(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

Rehabilitation is planned to occur in the following manner:

Drilling

- All drill holes will be rehabilitated before commencing to the following
- The drill chips extracted will be backfilled in a reverse sequence as being drilled out
- The rehabilitated area will be continuously inspected against invader / pioneer plant species and to monitor the indigenous vegetation regrowth

During the decommissioning of the mine the following will be done to ensure a successful closure. All infrastructure will be removed for the area and the compacted ground ripped and rehabilitated.

- Mine roads will also be ripped and rehabilitated.
- Where necessary will the settled material from the settling dam be used as a topsoil to finalize rehabilitation
- All rehabilitated areas will be monitored and regularly inspected against invader / pioneer species as well as monitoring the indigenous vegetation regrowth rate.

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

Throughout this whole document and during the environmental assessment and environmental management all possible management, remediation and mitigation measures were planned toward the rehabilitation of the environment to result in an outcome compatible with the closure objectives.

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

The calculated total amount necessary for the financial provision to manage and rehabilitate the environment is **R62 231.00** as per the table below

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

The applicant will provide the total amount of **R62 231.00** in the form of a bank guarantee on the granting of this Prospecting Right application.

2. Environmental awareness plan

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

Initial employee training will be done on employment of personnel, handling all issues related to General and Conservational Environmental Awareness. Follow up training workshops will be held on an annual basis and when expansion and/or implementation of new equipment are introduced to the mine.

Motivation:

- Inspections will be held on a regular basis against the do's and don'ts listed within this document. Immediate penalties can be given to offenders.
- On the discretion of the mine, motivation can be implemented
- By all-expenses paid, braai/function at the end of unbroken fixed environmental contamination hours.

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

Everyday Awareness

- Littering – As wild species still roam the area from time to time, the accidental ingestion of litter is a possibility and highly dangerous as it can and will kill the animal involved. Even when not ingested smaller mammals are always at risk in getting tangled with plastics, rubber etc., this can ensure numerous injuries and eventually death of the animal. Plastics, rubber, some types of paper and glass are not biodegradable and release poisons into the environment when exposed to harsh weather conditions. Even when buried, they tend to resist weathering. These poisons released into the environment can be harmful to our plant species, but even if it is not harmful to the plant itself the plant tend to store all absorbed substances in their fruit, roots and root tuber and the last mentioned may be utilized by humans or animals leading to the consumption for harmful chemicals that may pose illness or even death. No glass, paper, plastics and cigarette duds are to be littered during the duration of the mining operations. Garbage containers will be installed and maintained to prevent litter pollution.

Open fires

- The Northern Cape is generally known as a semi-arid region with less than moderate rainfall per annum. It is however by law prohibited to start open fires. Due to the hot and dry conditions of the region is it very susceptible for runaway fires. No open fires will be tolerated during the mining period and as this is regarded by law as a criminal offence related penalties can be issued. The littering of self-ignitable substances or objects (e.g. matches) are also not allowed as it will always pose a danger regarding field fires, and if such happen the person responsible to the littering will be charged with arson and related penalties can be issued.

Sanitation and Personal Hygiene

- Sanitation and personal hygiene is a very important subject for environmental and social health. Improper sanitation habits can lead to intestinal parasite infestations within humans and animals, endangering the overall health of the recipients. Unfortunately, these infestations do not stay only within the host and will spread rapidly throughout a community or herd. Human viruses like Tubercle bacillus (TB) and Herpes simplex, both are very contagious, spread vigorously throughout a community not handling good hygiene habits/practices.
 - ✓ Strict use and cleanliness of the toilette facilities will be enforced during the entire life of mine.

- ✓ Employees will further be advised and educated on the importance of consuming clean and fresh water. Several sites will be identified and water tanks will be erected for safe human water consumption.

Fauna

- Wild animals roaming within the area is a common sight from time to time, but reptiles and smaller rodents permanently inhabit the area. Wild animals are and will always be very dangerous. Employees will be advised to stay clear from any wild animal or reptile and not to try and provoke them in any manner. They will further be educated on dangerous and poisonous reptiles and the actions to be taken when such reptiles are encountered.

Flora

- The vegetation of the Northern Cape regions is very fragile and easily endangered by pioneer species invading the Northern Cape at an alarming rate and due to the slow growth rate of our indigenous species. No indigenous shrubs or trees will be unnecessarily uprooted and utilized for firewood, the employees will rather be advised to utilize pioneer species and be educated on which plant species are indigenous, endangered or pioneer. If any pioneer species are observed the reporting thereof to the rehabilitation site manager will be highly recommended. Penalties will be given to individuals that damage any endangered species e.g. cutting branches/bark from a Camel/Grey Camel tree

Work Related Awareness

- Work shops

All work shop personnel will receive a basic information session regarding the threats of diesel, oil and other related chemicals impose on the environment. The following must be implemented or enforced: -

- ✓ Before cleaning the work shop, make sure all spillages have been treated.
- ✓ When handling related chemicals make sure of non-spillage procedures.
- ✓ Make sure boots are cleaned from chemicals before leaving the workshop into the unprotected environment.
- ✓ Vehicles must be in the workshop before removal of drip pans.
- ✓ When working on equipment outside the workshop, the appropriate measures need to be implemented to prevent chemical spillage.
- ✓ Related waste/scrap must be disposed off in the appropriate manner.

Wash bay

- Although washing of vehicles do not pose a risk to the environment several pointers need to be adhered to:-
- ✓ Be sure that the electrical wires of the washing equipment do not make any contact with water used.
- ✓ Plastic and domestic wastes removed from the vehicles from the vehicles need to be discarded in the appropriate manner.
- ✓ If any oil or diesel leakage is observed, immediate communication with the workshop and repair of vehicle needs to be done, before it is cleaned or can be cleaned in the workshop.
- ✓ Make sure boots are cleaned from chemicals before leaving the bay into the unprotected environment
- ✓ When a detergent is used it must be ensured that it is bio- degradable and allocated for this purpose.

Heavy vehicle operators

All heavy vehicles pose a threat to the environment in several ways. Some awareness must be initiated by the operators to minimize the treat to the environment. The following must be implemented or enforced: -

- ✓ Daily checking for oil/diesel leakages before vehicle is operated
- ✓ Drip pans must be installed during “off-time”
- ✓ Immediate communication with the workshop when faults are observed.
- ✓ Strict adherence to the mine roads and no off-road driving to prevent trampling of vegetation
- ✓ Driving speed must be complied with.
- ✓ Beware of animals, workers and other vehicles.

Machinery operators

- Although the operational mining equipment does not pose any environmental risk, employees still need to adhere to some measurements to prevent spillage.
- Maintenance personnel
- All maintenance personnel must receive basic training on work related environmental awareness to minimize/eliminate the possibility of environmental degradation. Pointers that will be looked at:-
 - ✓ Electricians may not leave any cables unprotected scattered on the site – animals may get tangled up.
 - ✓ During fencing/rehabilitation common fence wires may not be left scattered as these rust over time – any cuts to animals and humans (sepsis and tetanus risk) can lead to suffering or great discomfort.
 - ✓ No metals may be left scattered as it poses the same threat as described directly above
 - ✓ All personnel handling chemical relating products must follow handling procedures – any spillage contaminating the ground will pose risk to environmental degradation
 - ✓ All chemical used must be put to storage afterwards – containers may leak and environmental contamination occurs.

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

The Applicant commits to reviewing the Financial Provision on an annual basis as per the requirements of Section 24(P)(3) of NEMA, which states that every holder must annually assess his or her environmental liability and, if circumstances so require, must adjust his or her financial provision to the satisfaction of the Minister responsible for mineral resources.

In addition, the Biomental Services(Pty) Ltd commits to conduct EMPr performance assessments as required in terms of Regulation 55 of the MPRDA on a biennial basis and external environmental audits of the EMP and Environmental Authorisation as per the NEMA EIA Regulations, 2014 according to the frequency indicated in the Environmental Authorisation. The Competent Authority has not requested any specific information to date.

4. Specific information required by the Competent Authority

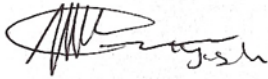
(Among others, confirm that the financial provision will be reviewed annually)

- Annually renewal of financial provision
- Annual Monitoring and Compliance Report
- Annual Progress Report
- Annual Environmental Awareness Training Report

5. Undertaking

The EAP herewith confirms

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&APs
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.



Signature-----

Date: **24/03/2023**

Tiyiselani Macebele

END

APPENDIX 1

Department of Mineral Resource and Energy Acceptance Letter



**mineral resources
& energy**

Department:
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag x6093, 8300, 41 Schmidtsdrift Road, Telkom Building, Kimberly, 8301 Kimberley, 8301
Tel: 053 807 1729 Fax: 053 832 5671 Email: Jeanette.Moabi@dmr.gov.za. Ref: NC30/5/1/1/2/13305 PR

From: Mineral Regulation

Enquiries: JM Moabi

Per Registered Mail

The Director/s

Letso Investment (Pty) Ltd

4th Floor West Tower
Ormonde
Sandton
Johannesburg
2013

Email: jshole@nkanyeziresources.co.za

Dear Sir/Madam

APPLICATION FOR PROSPECTING RIGHT IN TERMS OF SECTION 16 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002) AS AMENDED BY SECTION 12 OF ACT 49 OF 2008: FOR MANGANESE ORE AND IRON ORE: TWEED 632: WITHIN THE ADMINISTRATIVE DISTRICT OF KURUMAN.

1. This is to inform you that your application for a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) ("Act") as amended to prospecting right to prospect for **Manganese Ore** and **Iron Ore** has been **accepted**.
2. In terms of section **12 (d)** of the Act, you are directed to comply with the following instructions:
 - a. Notify and consult with the landowner, lawful occupier and any interested and affected party and include the result of the consultation in the environmental reports in line with Regulation 41(2) read with Section 24J of National Environment Management Act, 1998.
 - b. Lodge an application in terms of National Water Act No.36 of 1998 with the Department of Water Affairs with immediate effect.

3. Your attention is drawn to the provisions of sections 17(1)(e) of the MPRDA, which provide that the Minister may grant an application for a prospecting right if the applicant is not in contravention of any relevant provision of this Act. Section 19(2) (f) places an obligation on the holder of a prospecting right to pay the prescribed prospecting fees, as per regulation 76 of the MPRDA.
4. You are therefore reminded to ensure that payment of all prospecting fees for all the prospecting rights that you hold, are up to date, failing which this may have a negative impact on the outcome of your current application.
5. Further note that the acceptance of your application does not grant you the right to commence with prospecting activities. It only signifies that your application will be processed, evaluated and the Minister or his delegate will make a decision within 197 days from the date of lodgement of your application.

Yours faithfully



**REGIONAL MANAGER
MINERAL REGULATION
NORTHERN CAPE REGION
DATE: 17/10/2022**

APPENDIX 2A

EAP Qualifications (Tiyiselani Macebele)



This is to Certify that the Degree of
**Bachelor of
Environmental Sciences**

was Awarded to
MACEBELE TIYISELANI
at a Ceremony held on the
19-SEP-2008

in Accordance with the Provisions of the
Act and Statute


Vice Chancellor




University Registrar

Appendix 2B: Nhlawulo Election Mahori



University of Venda

This is to Certify that the Degree of
BACHELOR OF ENVIRONMENTAL SCIENCES

was Awarded to

MAHORI NHLAWULO ELECTION

9405085668087

at a Ceremony held on the

18 - May - 2017

in Accordance with the Provisions of the
Act and Statute

A handwritten signature in black ink, appearing to be 'A. M.', written over a horizontal line.

Vice Chancellor

6508081992



A handwritten signature in black ink, appearing to be 'S. M.', written over a horizontal line.

University Registrar

A handwritten signature in black ink, appearing to be 'J. M.', written over a horizontal line.

Dean



University of Venda

This is to Certify that the Degree of
*BACHELOR OF ENVIRONMENTAL SCIENCES
HONOURS*

was Awarded to

MAHORI NHLAWULO ELECTION

9405085668087

at a Ceremony held on the

21-Sep-2018

in Accordance with the Provisions of the
Act and Statute

A handwritten signature in black ink, appearing to be 'P. Mphahlele'.

Vice Chancellor

1809210468



A handwritten signature in black ink, appearing to be 'J. Mphahlele'.

University Registrar

A handwritten signature in black ink, appearing to be 'J. Mphahlele'.

Dean



Registration No. 2019/1026

Herewith certifies that

Nhlawulo Election Mahori

is registered as an

Candidate Environmental Assessment
Practitioner

*Registered in accordance with the prescribed criteria of Regulation 15. (1)
of the Section 24H Registration Authority Regulations
(Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the
National Environmental Management Act (NEMA), Act No. 107 of 1998, as
amended).*

Effective: 01 March 2022

Expires: 28 February 2023

Chairperson

Registrar

 SAQA





herewith certifies that
Nhlawulo Election Mahori
Registration Number: 125490
is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)
Environmental Science (Candidate Natural Scientist)

Effective **11 September 2019**

Expires **31 March 2023**



A handwritten signature in black ink, appearing to read 'Botha', written over a horizontal line.

Chairperson

A handwritten signature in black ink, appearing to read 'R. J. ...', written over a horizontal line.


Chief Executive Officer



To verify this certificate scan this code

1

I.D.No. 940508 5668 08 7



S. A. BURGER/S. A. CITIZEN

VAN/SURNAME
MAHORI


VOORNAME/FORENAMES
NHLAWULO ELECTION

GEBORTEDISTRIK OF LANDY
DISTRICT OR COUNTRY OF BIRTH
SOUTH AFRICA

GEBORTE DATUM/
DATE OF BIRTH
1994-05-08

DATUM UITGEREIK
DATE ISSUED
2010-07-20

UITGEREIK OP BESAG VAN DIE
DIREKTOR-GENERAAL
BINNELANDE SAKKE
**ISSUED BY AUTHORITY OF THE
DIRECTOR-GENERAL
HOME AFFAIRS**



GEREGISTREERDE WOON- EN POSADRES

1. Bewaar die bewys van u GEREGISTREERDE WOON- EN POSADRES in hierdie sakkie.

2. Indien u van adres verander het, of indien besonderhede van u huidige adres, by straatnaam en/of -nommer, ens. verander het, moet die vorm **KENNISGEWING VAN ADRESVERANDERING**, wat in die sakkie agter in die identiteitsdokument is, gebruik word om die verandering aan te meld en moet dit ingedien word by of gepos word aan die naaste streek- distrikkantoor van die DEPARTEMENT VAN BINNELANDE SAKKE.

REGISTERED RESIDENTIAL AND POSTAL ADDRESS

1. Keep the proof of your REGISTERED RESIDENTIAL AND POSTAL ADDRESS in this pocket.

2. If you have changed your address, or, if particulars of your present address, e.g. name of street and or street number, etc., have been changed, the **NOTICE OF CHANGE OF ADDRESS** form in the pocket at the back of the identity document must be used to report the change and it must be handed in at or posted to the nearest regional district office of the DEPARTMENT OF HOME AFFAIRS.

Appendix 2.C: Fortunate Ngubeni





UNIVERSITY
OF
JOHANNESBURG

The Council and the Senate of the
UNIVERSITY OF JOHANNESBURG
hereby certify that the degree

BACCALAUREUS ARTIUM

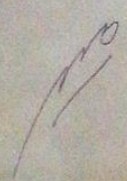
with field of study

Geography

with all its associated rights and privileges
in accordance with the Statute of the
University has been conferred upon

JABHILE FORTUNATE NGUBENI

at a congregation of the University


Vice-Chancellor


Registrar

28 FEBRUARY 2011
Johannesburg
ID: 9007130267085



52427

U·J Sociology

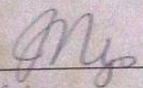
Certificate

It is hereby certified that

JF NGUBENI

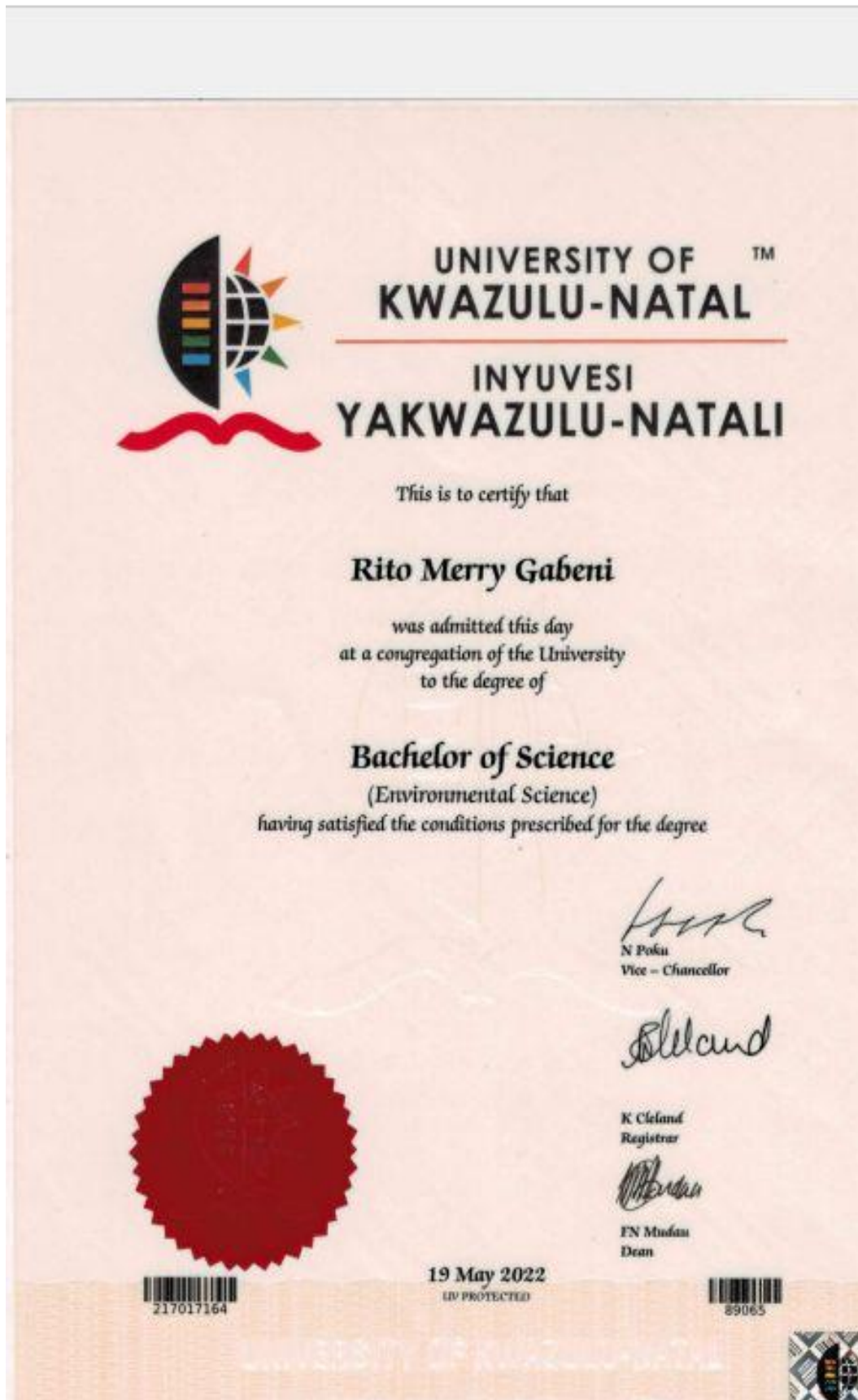
successfully completed a practical course in social research. In doing so, he/she conceptualised and executed the research project, and in this process, covered the following elements:

- Research design
- Questionnaire construction
- Drafting an interview schedule
- Transcription of recorded data
- Coding and capturing of data
- Data analysis
- Reporting data


Prof Tina Mps
Chairperson
Department of Sociology

21 October 2020
Date

Appendix 2.D: Rito Gabeni

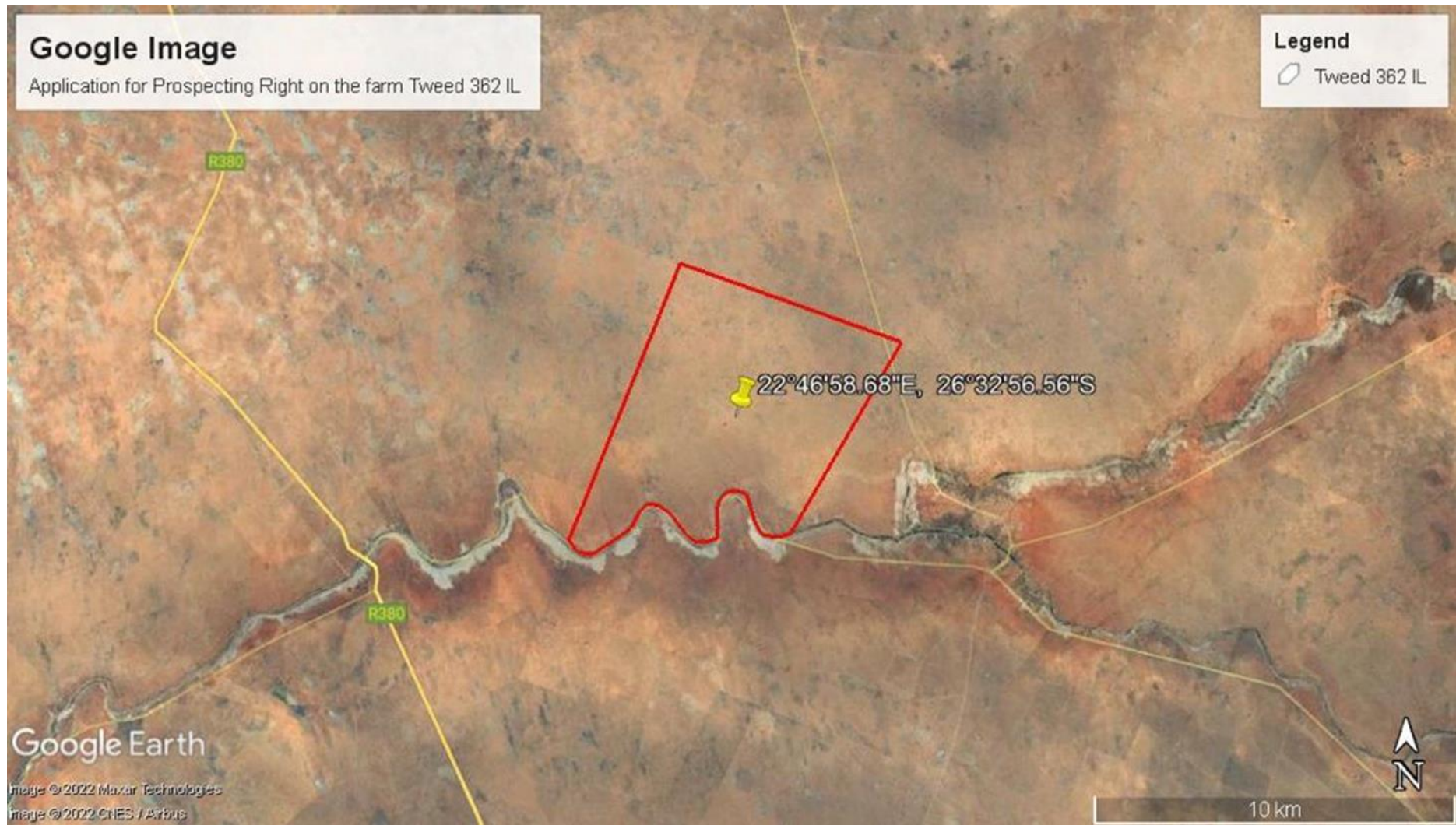


APPENDIX 3

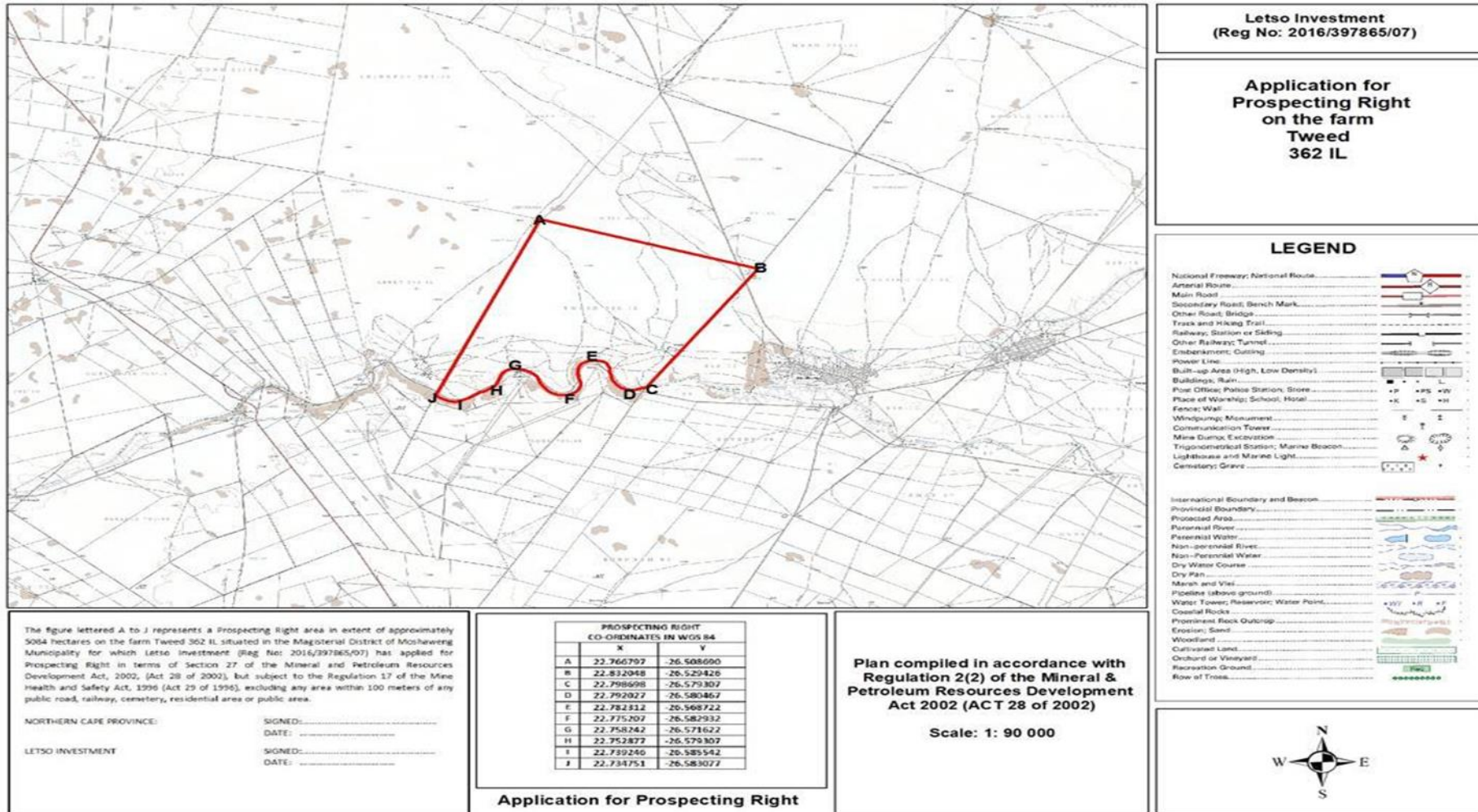
Locality Map

DRAFT

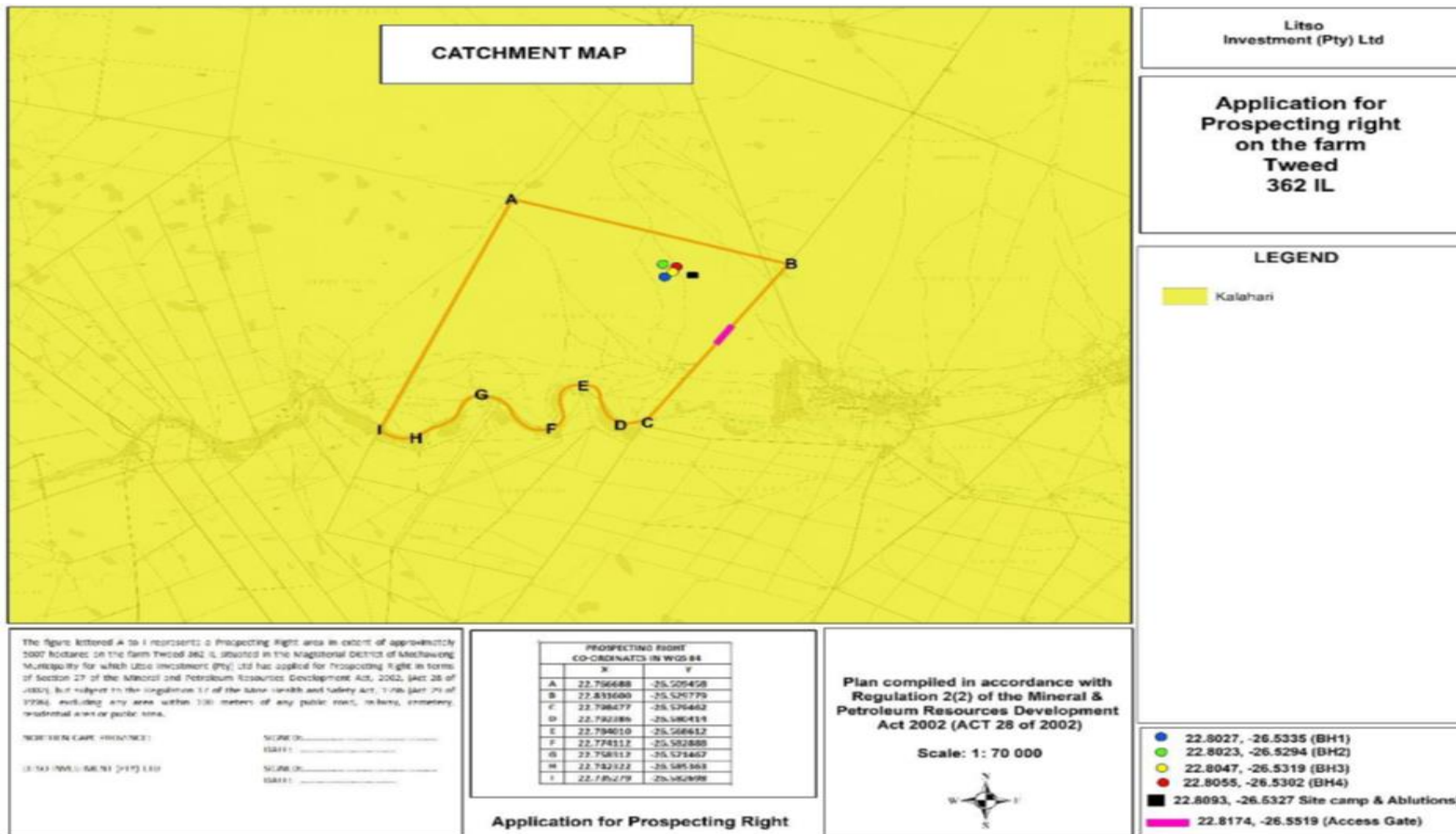
Appendix 3.A:Regional Map



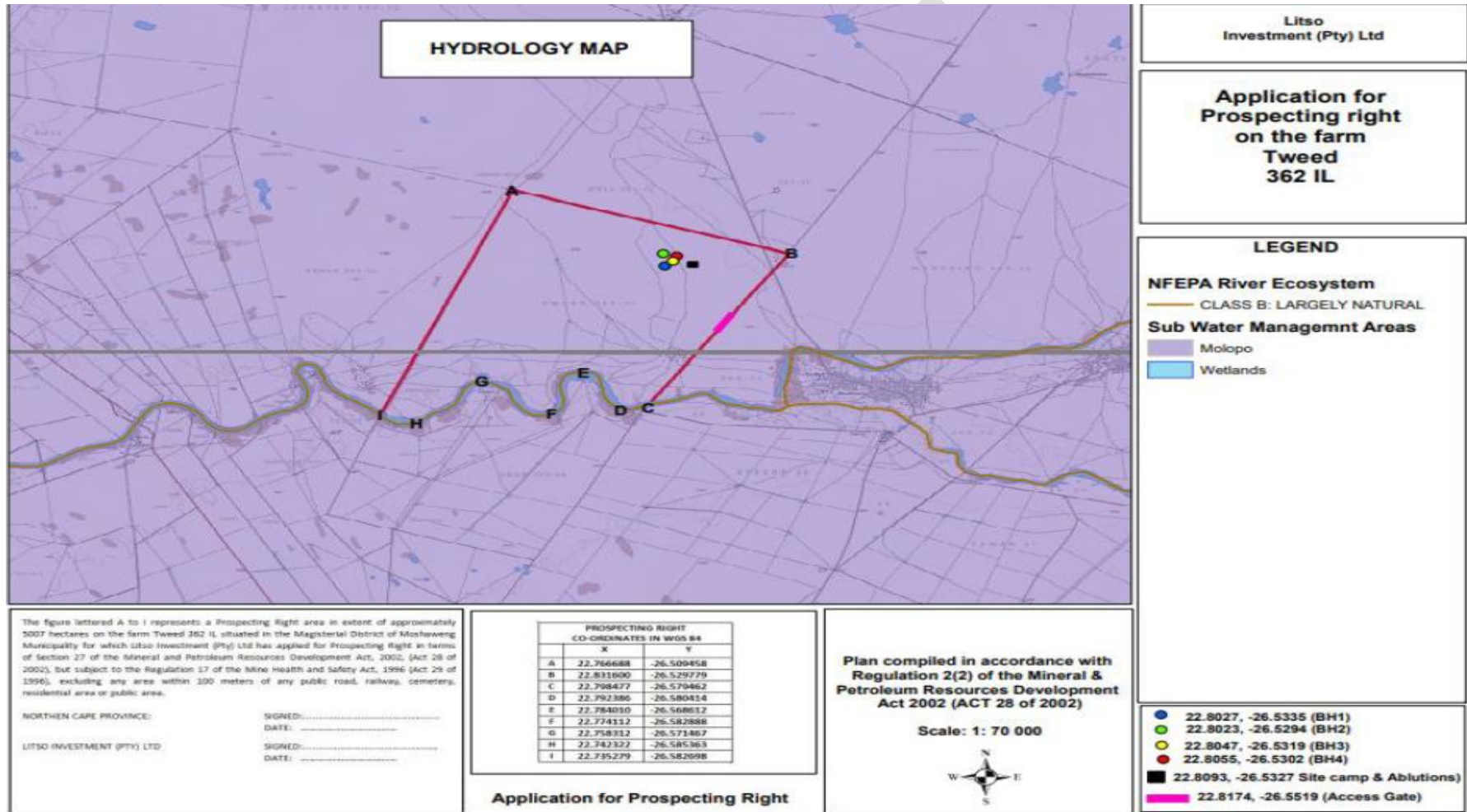
Appendix 3.B: Topographic Map



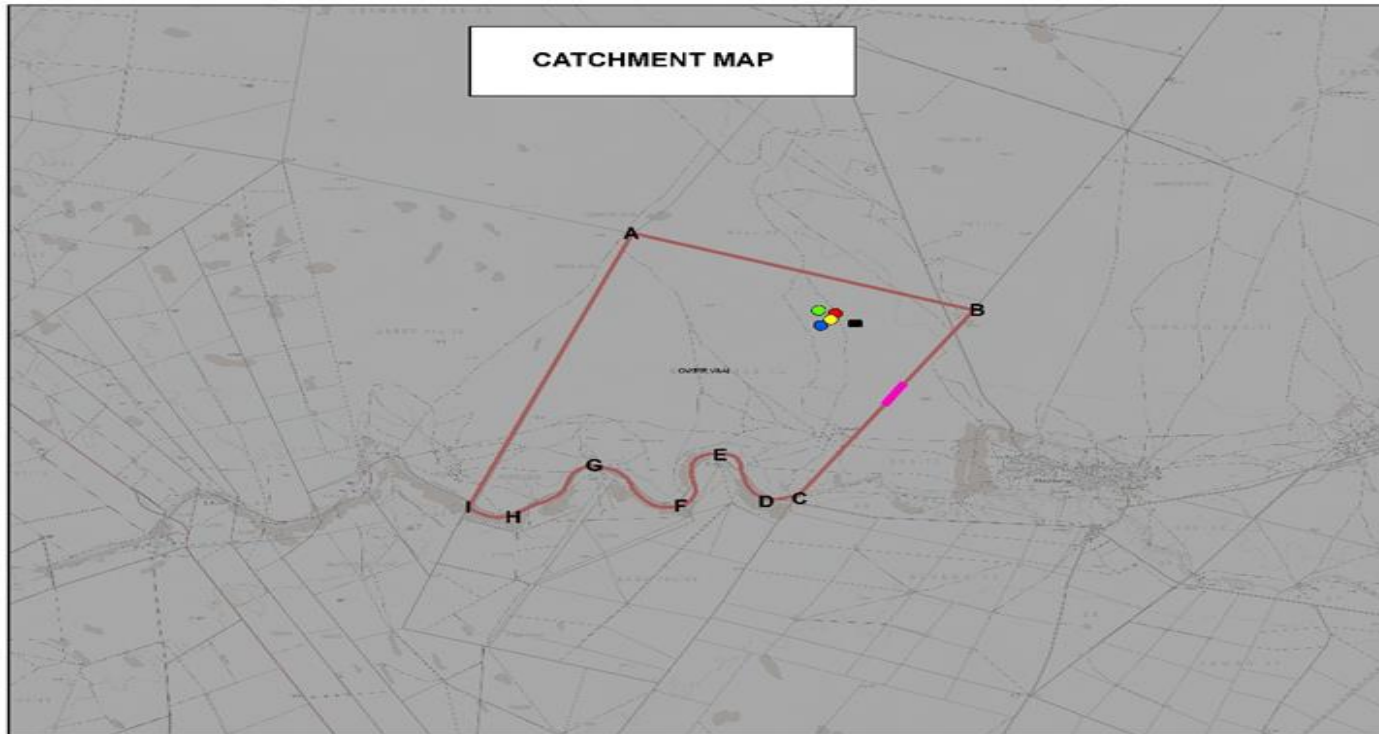
Appendix 3.C:Geology



Appendix 3.D:Hydrological Map



Appendix 3D:Hydrological Map(Lower Vaal)



Litso Investment (Pty) Ltd

Application for Prospecting right on the farm Tweed 362 IL

LEGEND
 LOWER VAAL

The figure lettered A to I represents a Prospecting Right area in extent of approximately 5000 hectares on the farm Tweed 362 IL situated in the Magisterial District of Kooxhawing Municipality for which Litso Investment (Pty) Ltd has applied for prospecting right in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002, (Act 28 of 2002), but subject to the regulation 3.7 of the same Health and Safety Act, 1974 (Act 28 of 1974), excluding any area within 100 meters of any public roads, railway, cemetery, residential area or public area.

NORTHERN CAPE PROVINCE: _____
 DATE: _____
 LITSO INVESTMENT (PTY) LTD: _____
 DATE: _____

PROSPECTING RIGHT CO-ORDINATES IN WGS 84		
	X	Y
A	22.756688	-26.509458
B	22.831690	-26.529779
C	22.798477	-26.526462
D	22.732385	-26.580411
E	22.784010	-26.566612
F	22.774112	-26.582888
G	22.758312	-26.571467
H	22.742322	-26.585363
I	22.782779	-26.582698

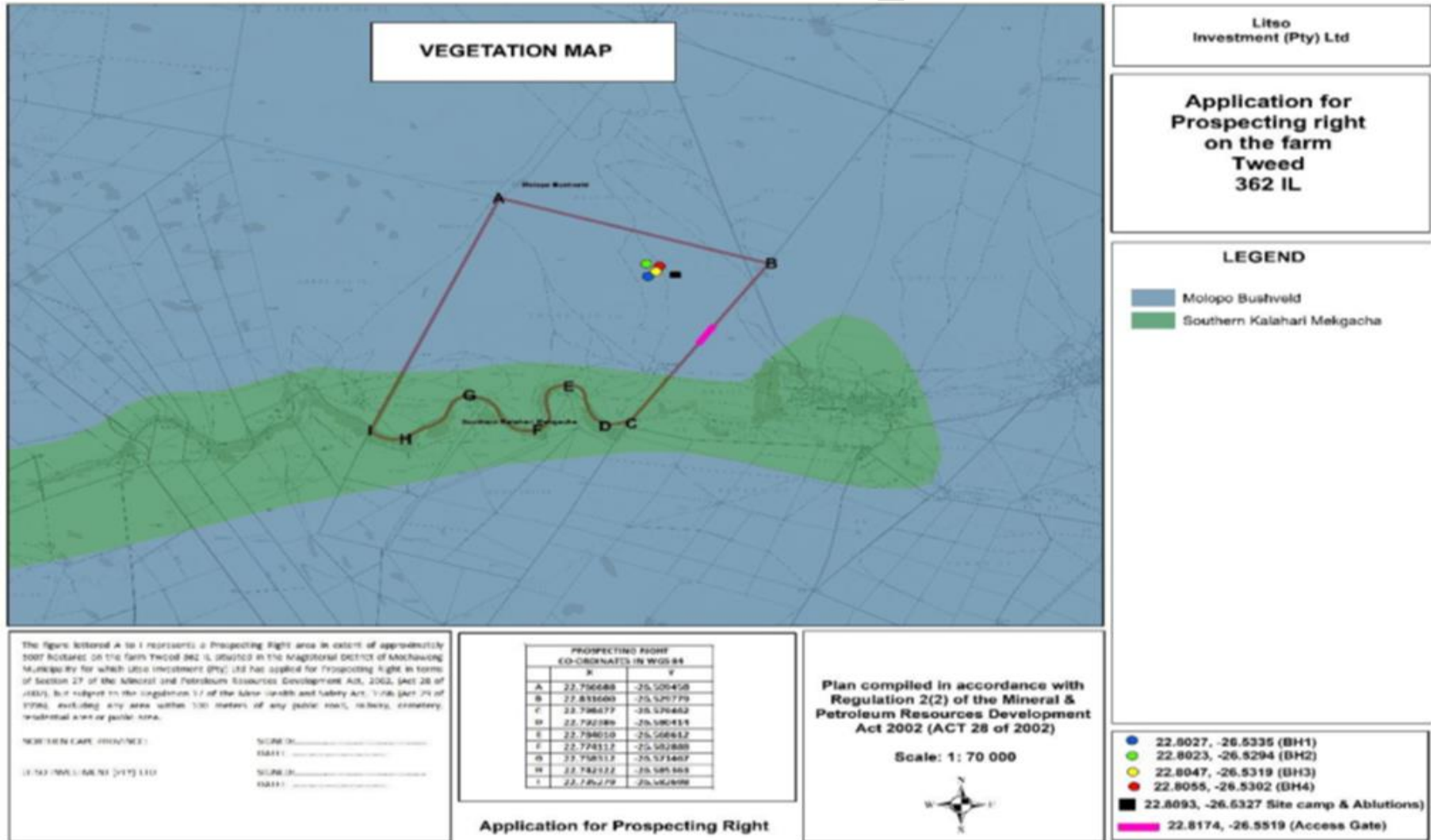
Application for Prospecting Right

Plan compiled in accordance with Regulation 2(2) of the Mineral & Petroleum Resources Development Act 2002 (ACT 28 of 2002)

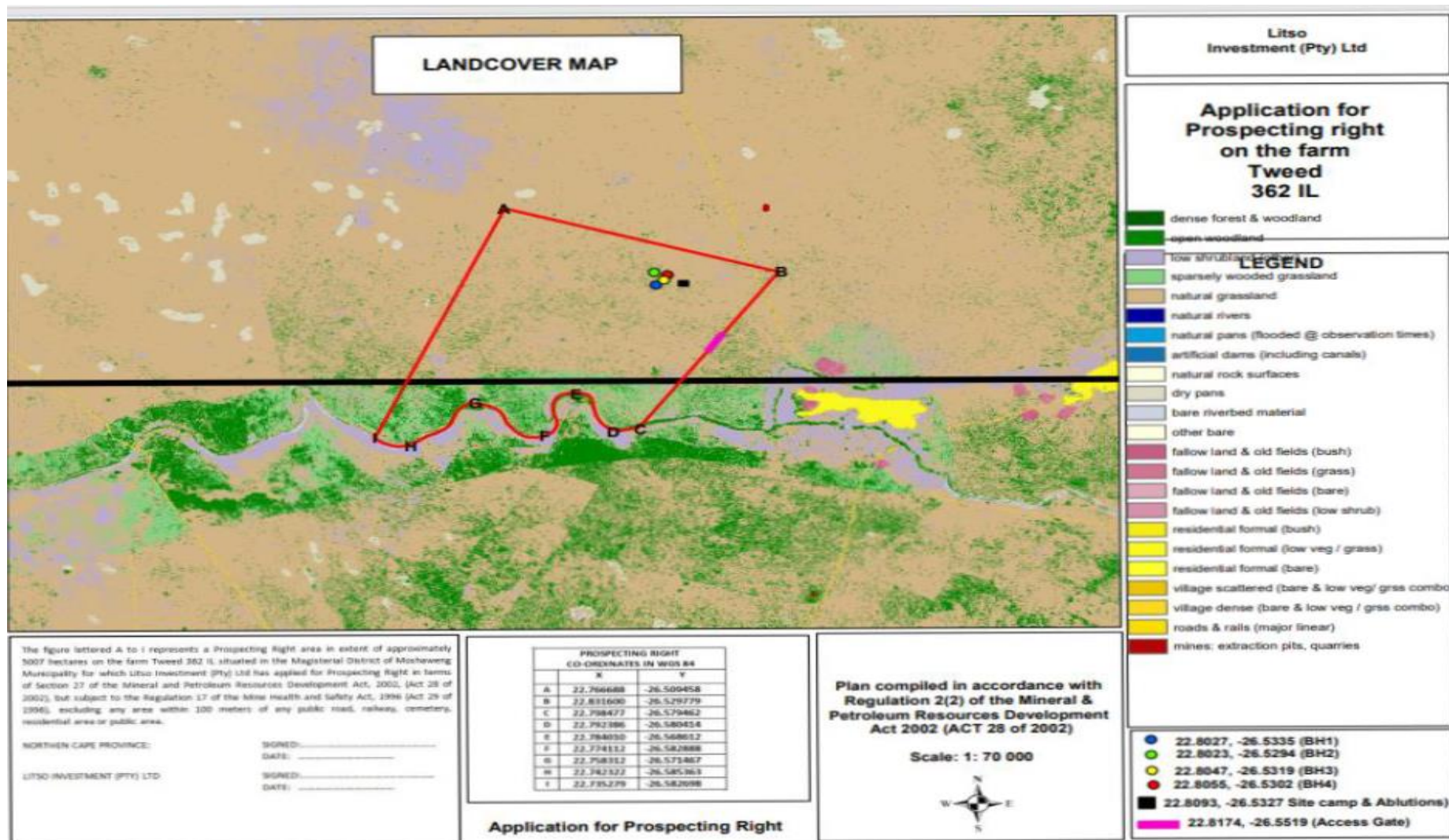
Scale: 1: 70 000

- 22.8027, -26.5335 (BH1)
- 22.8023, -26.5294 (BH2)
- 22.8047, -26.5319 (BH3)
- 22.8055, -26.5302 (BH4)
- 22.8093, -26.5327 Site camp & Ablutions)
- 22.8174, -26.5519 (Access Gate)

Appendix 3E:Vegetation Map



Appendix 3E: Landcover and Land Use Map



APPENDIX 4: Specialist Study Reports

DRAFT

Appendix 4A: Ecological Study

DRAFT

Appendix 4B: Archaeological and Cultural and Heritage Study

DRAFT

Appendix 5: Quantum Calculations

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Appendix 6

Screen tool Report

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Appendix 7: Public Participation Report

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