DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING ACTIVITIES ON VARIOUS PROPERTIES IN THE MAGESTERIAL DISTRICT OF KURUMAN, NORTHERN CAPE

For

Salene Manganese (Pty) Ltd

For the following Minerals:
Aluminium, Silver, Arsenic, Barium, Bismuth, Cerium (Rare Earths), Cadmium, Cobalt, Copper, Caesium, Potassium, Lanthanum (Rare Earths), Lithium, Magnesium, Molybdenum, Neodymium (Rare Earths), Nickel, Phosphorus, Lead, Palladium, Platinum, Rubidium, Sulphur, Scandium (Rare Earths), Silicon, Strontium, Tantalum, Titanium, Vanadium, Tungsten, Yttrium, Zinc and Rare Earths

Located on:

Olive Pan 282, Gama 283, Telele 12, Dikgathlong 268, Dibiaghomo 226, Boshof 300, Roldraai 333, Drakenstein 263, East 270, Umtu 281, Olivewood 284, Mooidraai 310, Kongoni 311, Smartt 314, Middleplaats 332, Klipling 271, Hotazel 280, Epsom 285, Tigerpan 286, Botha 313, Mukulu 265, Gloria 266, Wessls 227, Adams 328, Belgravia 264, Mamatwan 331, Sinterfontein 748, York 279, Devon 277 And Perth 276: Within The Administrative District Of Kuruman,
Northern Cape Province

DMR Reference Number: **NC30/5/1/1/2/13138 PR**

This report will be made available for Public Comment from

20 October 2022
to
20 November 2022

Basic Assessment Report Compiled by:

Prescali Environmental Consultants (Pty) Ltd

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Title:
DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED PROSPECTING ACTIVITIES ON VARIOUS PROPERTIES IN THE MAGESTERIAL DISTRICT OF KURUMAN, NORTHERN CAPE FOR SALENE MANGANESE (PTY) LTD

Client:

Project Applicant:	Salene Manganese (Pty) Ltd		
Registration Number (if any):	2001/012632/07		
Trading Name (if any):	Salene Manganese (Pty) Ltd		
Responsible Person, (e.g. Director, CEO, etc.):	Director		
Contact Person:	Moira Jaquet- Briner		
Physical Address:	351 Main Road, Bryanston, 2191		
Postal Address:	P O Box 50917, Randburg, 2125		
Postal Code:	2060	Mobile Number:	082-440 8176
Telephone Numbers:	011- 463 7100	Fax	011-463 7101
E-mail Address:	Moira@salene.com		

Report no.:
Salene/Gloria/Prospecting/BAR/v0

Document prepared by:

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Telephone No: 012 - 543 3808
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DOCUMENT CONTROL

	Name	Signature	Date
Compiled:	Dr Petro Erasmus *(Pri.Sci.Nat)(EAPASA)*		31/08/2022
Checked:	Ms Simrin Reddy		05/09/2022
Authorized:	Ms Elaine van der Linde*(Pri.Sci.Nat)(EAPASA*		07/09/2022

This report has been reviewed and approved for submission by ……., for Salene Manganese (Pty) Ltd:

Date: ……

Signature: ……

REVISION AND AMENDMENTS

Description of Revision / Amendment	No	Date
Salene Basic Assessment Report	0	08/09/2022
Salene Basic Assessment Report	1	

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT
AND
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

Basic Assessment Report for the proposed prospecting activities for Salene Manganese (Pty) Ltd for the following Minerals: Aluminium, Silver, Arsenic, Barium, Bismuth, Cerium (Rare Earths), Cadmium, Cobalt, Copper, Caesium, Potassium, Lanthanum (Rare Earths), Lithium, Magnesium, Molybdenum, Neodymium (Rare Earths), Nickel, Phosphorus, Lead, Palladium, Platinum, Rubidium, Sulphur, Scandium (Rare Earths), Silicon, Strontium, Tantalum, Titanium, Vanadium, Tungsten, Yttrium, Zinc and Rare Earths.

The proposed activities will be located on farms Olive Pan 282, Gama 283, Telele 12, Dikgathlong 268, Dibiaghomo 226, Boshof 300, Roldraai 333, Drakenstein 263, East 270, Umtu 281, Olivewood 284, Mooidraai 310, Kongoni 311, Smartt 314, Middleplaats 332, Klipling 271, Hotazel 280, Epsom 285, Tigerpan 286, Botha 313, Mukulu 265, Gloria 266, Wessls 227, Adams 328, Belgravia 264, Mamatwan 331, Sinterfontein 748, York 279, Devon 277 And Perth 276: Within The Administrative District Of Kuruman, Northern Cape Province.

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

NAME OF APPLICANT: Salene Manganese (Pty) Ltd
TEL. NO: 011-463 7100
FAX. NO: 011-463 7101
POSTAL ADDRESS: P. O. Box 50917, Randburg, 2125
PHYSICAL ADDRESS: 351 Main Road, Bryanston, 2191
DMR REFERENCE NUMBER: NC30/5/1/1/2/13138 PR

IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
(b) identify the alternatives considered, including the activity, location, and technology alternatives;
(c) describe the need and desirability of the proposed alternatives,
(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, 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) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
    (i) identify and motivate a preferred site, activity and technology alternative;
    (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
    (iii) identify residual risks that need to be managed and monitored.

EXECUTIVE SUMMARY

Salene Manganese (Pty) Ltd is proposing to conduct prospecting activities for the following minerals: Aluminium, Silver, Arsenic, Barium, Bismuth, Cerium (Rare Earths), Cadmium, Cobalt, Copper, Caesium, Potassium, Lanthanum (Rare Earths), Lithium, Magnesium, Molybdenum, Neodymium (Rare Earths), Nickel, Phosphorus, Lead, Palladium, Platinum, Rubidium, Sulphur, Scandium (Rare Earths), Silicon, Strontium, Tantalum, Titanium, Vanadium, Tungsten, Yttrium, Zinc and Rare Earths. The proposed activities will be located on farms Olive Pan 282, Gama 283, Telele 12, Dikgathlong 268, Dibiaghomo 226, Boshof 300, Roldraai 333, Drakenstein 263, East 270, Umtu 281, Olivewood 284, Mooidraai 310, Kongoni 311, Smartt 314, Middleplaats 332, Klipling 271, Hotazel 280, Epsom 285, Tigerpan 286, Botha 313, Mukulu 265, Gloria 266, Wessls 227, Adams 328, Belgravia 264, Mamatwan 331, Sinterfontein 748, York 279, Devon 277 And Perth 276: Within The Administrative District Of Kuruman, Northern Cape Province. The following is important to note:

- The minerals Cerium (Rare Earths), Lanthanum (Rare Earths), Neodymium (Rare Earths), Tungsten, Silicon and Rubidium (Rare Earths) are excluded on the following farms: Olive pan 282, Gama 283, Smartt 314 and Telele 12 as there are already accepted applications for the same minerals and land applied for.
- The minerals Lead, Cobalt, Zinc, Copper and Nickel Ore are excluded on the Farm Belgravia 264 as there is already an accepted application for the same minerals and land applied for.

Proposed Activities:

The proposed prospecting activities employs a phased approach, where the work program is divided into several sequential sections. At the end of each section there will be a brief period of compiling, interpretation of results and reporting. These results will not only determine whether the project proceeds, but also the manner in which it will go forward and the locality of the next phase of exploration. The applicant will only action the next stage once satisfied with the results obtained.

No bulk sampling work is to be carried out during the prospecting program as described in this report.

For this report (Phase one) the company only intent to collect samples from existing dumps/ tailings. No invasive drilling is expected or is planned at this stage. Should drilling on non-disturbed areas be necessary, an amended Prospecting Works Plan (PWP) and Environmental Authorisation application shall be submitted for approval.

It is envisaged that the exploration programme (for approval as per this report) will include the following activities/techniques as discussed below.

The data acquisition and reporting will be in accordance with the guidelines of the SAMREC and JORC Codes.

- **Desk-top Studies:** The area is known for Manganese and iron mining. Available historic prospecting data will be captured and evaluated, and a working plan of the area on a suitable scale (1:10 000 or 1:20 000) compiled. The desk top study will provide guidance with respect of areas to target for soil sampling, and drilling (not envisaged at this point in time, if needed an amendment will be applied for).
- **Mapping:** Geologic mapping involves plotting the location and attitude of the various rock units, structures, economic mineral/metal occurrences, etc. as observed in the field on a base map. Geological mapping will be on a scale suitable for the local geological variability. Mapping will be done along lines spaced at regular intervals and oriented perpendicular to the expected north-south striking lithologies in the area. The mapping will primarily focus on the delineation of the KFM Formation to establish the occurrence of minerals that form part of this application.
- **Compilation of Data, Interpretation and Reporting:** This will follow after completion of the non-invasive phase, and before the planning of the first drilling phase (not envisaged at this point in time, if needed an amendment will be applied for), and will be updated after completion of successive drilling programs.
- **Resource estimation:** The borehole logs (from the drilling phase – to be confirmed) and analytical data/results are captured into an electronic database and validated. 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 grade of the potential precious and base metal deposit.

Drilling will only be considered once sampling proves successful. This BAR only covers non-invasive sampling activities. Should drilling be considered then an amendment to the environmental authorization will be applied for.

Listed Activities:

The proposed activities will trigger the following NEMA Listed Activities:

NAME OF ACTIVITY *(E.g., For prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route*	**AERIAL EXTENT OF THE ACTIVITY Ha or m²**	**LISTED ACTIVITY** *(Mark with an X where applicable or affected).*	**APPLICABLE LISTING NOTICE**
Sampling site	10 x 12 Sampling Site 1 Sample site = 1 m^2 Total Sampling Site Area = 120 m^2	X	GNR 983 (as amended 07 April 2017) Listed Activity 20
Rehabilitation and Closure	120 m^2	X	GNR 983 (as amended 07 April 2017) Listed Activity 22

Need and desirability of the proposed activities:

The positive impact of the proposed activity is the discovery of economically viable mineral resources within the Joe Morolong Local Municipality.

Public Participation:

It should be noted that this report will be made available to I&AP's for review and comment and their comments and concerns will be taken into account in the BAR that will be submitted to the DMR. Furthermore, it should be noted that the final impact scores themselves will include the results of the public responses and comments as received by Prescali.

Potential impacts identified:

Aspect	**Activity**	**Impact**	**Phase**	**Positive / Negative**
All	Planning of prospecting activities	No impacts are foreseen due to the non-invasive nature of the planning phase	All	N/A
All	Consultation of affected parties	N/A	All	N/A
All	Potential construction of roads and infrastructure	None foreseen as existing access roads will be used to access the proposed sampling areas	Co	N/A
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Temporary disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	O	Negative

Aspect	Activity	Impact	Phase	Positive / Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Loss of CBA1 and ESA and other sections of area classed as other natural Areas	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Displacement of Faunal community due to temporary habitat loss, disturbance (noise, dust, and vibration) and/or direct mortalities	O	Negative
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Continued disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Encroachment by alien invasive plant species	O, CI	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Further impacts due to the spread and/or establishment of alien and/or invasive species	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Further impacts due to the spread and/or establishment of alien and/or invasive species	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbances such as dust, vibrations poaching and noise.	O	Negative
Groundwater	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Degradation of aquifers	O	Negative

Aspect	Activity	Impact	Phase	Positive / Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts of existing groundwater users	O	Negative
Heritage Resources	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts on potential burial grounds and graves	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts on archaeological resources	O	Negative
Noise	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Noise nuisance	O	Negative
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Pollution of soil	O	Negative
Air	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Air Quality	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Deterioration and damage to existing access roads and tracks	O, D	Negative
Socio-economic	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential job creation	O, D	Positive
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Safety and security to existing landowners and lawful occupier	O, D	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Interference with existing land uses	O, D	Negative
Waste	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Generation and disposal of waste	O, D	Negative
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Erosion due to improper rehabilitation	D	Negative
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential soil pollution from hydrocarbons spills from vehicles used to access the stie	O	Negative
Land Use	Site access to the proposed sampling site	Potential impact on the disposal of waste on the sampling area by the operational mining company	O	Negative

Aspect	Activity	Impact	Phase	Positive / Negative
Land Use	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential impact on the disposal of waste on the sampling area by the operational mining company	O	Negative
Service provision: Electricity	Site access to the proposed sampling site	Potential overlap with existing ESKOM infrastructure or future planned expansion.	O	Negative
Service provision: Electricity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential overlap with existing ESKOM infrastructure or future planned expansion.	O	Negative
All	Rehabilitation of disturbed sites	Rehabilitation of sampling area to predetermined land use	Re	Positive

No specialist studies were conducted for the proposed prospecting activities, as sampling will as far as possible take place on existing mining areas / impacted areas that have already been disturbed or degraded.

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PART A
SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1 CONTACT PERSON AND CORRESPONDENCE ADDRESS

1.1. Details of:

1.1.1 The EAP who prepared the report

Name of the Practitioner: Prescali Environmental Consultants.
The report was compiled by Dr Petro Erasmus *(EAPASA)(Pri.Sci.Nat)*.
Tel No.: 012 543 3808
Fax No. :086 621 0294
e-mail address: info@prescali.co.za

1.2. Expertise of the EAP

1.2.1. The qualifications of the EAP

(With evidence attached as Appendix 1

Dr. P. Erasmus has qualifications in Zoology and Biochemistry and further studied in Zoology and Marine pollution. She is registered as a Pri Sci Nat. (SACNASP), Natural Professional Scientist, for Ecological and Environmental Sciences. She is also a registered Environmental Assessment Practitioner with EAPASA. Her qualifications are provided in Appendix 1.

Reviewers:

- Ms Simrin Reddy has qualifications in Environmental Sciences. Her qualifications are provided in Appendix 1.
- Ms. E. van der Linde has qualifications in Geology, Engineering Geology and Environmental Management and experience in Water and Environmental Management. She is registered as a Pri Sci Nat. (SACNASP), Natural Professional Scientist. Her qualifications are provided in Appendix 1.

1.2.2. Summary of the EAP's past experience.

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

Dr. P. Erasmus has 15 years of applicable experience (a short resume with a list of projects is attached in Appendix 2 and has been employed by:

- Department: Water Affairs and Forestry (DWAF);
- M2 Environmental Connections (Pty) Ltd; and
- Prescali Environmental Consultants (Pty) Ltd.

Reviewers:

- Miss S. Reddy has 1 year 2 months applicable experience (a short resume with a list of projects is attached in Appendix 2) and has been employed by:
  - Prescali Environmental Consultants (Pty) Ltd.
- Ms. E. van der Linde has 20 years of applicable experience (a short resume with a list of projects is attached in Appendix 2 and has been employed by:
  - Department: Water Affairs and Forestry (DWAF);
  - Groundwater Consulting Services cc;
  - M2 Environmental Connections cc; and
  - Prescali Environmental Consultants (Pty) Ltd.

2. LOCATION OF THE OVERALL ACTIVITY.

The proposed prospecting activities will take place on the following farms and portions as outlined below. Please refer to Figure 3-1.

Application Area (Ha):	73 621.8804 Ha
Distance and Direction from Nearest Town:	50 km North-West of Kuruman
Magisterial District:	Kuruman

Locality Map:	Attach a locality map at a scale not smaller than 1:250 000. See Locality map append as Appendix 3 and included in report as Figure 3-1 and Figure 4-1.

Applicable to all farms:			
Administrative District:	**Kuruman**	**Registration Division:**	RD

1.	**Farm Name:**	Sinterfontein	
	Farm Number:	748	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000074800000

2.	**Farm Name:**	Adams	
	Farm Number:	328	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000032800000
		4	C04100000000032800004

3.	**Farm Name:**	Middelplaats	
	Farm Number:	332	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000033200000
		4	C04100000000033200004

4.	**Farm Name:**	Smartt	
	Farm Number:	314	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000031400000
		1	C04100000000031400001

5.	**Farm Name:**	Rissik (in the acceptance letter this farm is referenced as Boshof 300)	
	Farm Number:	330	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		1	C04100000000033000001
		3	C04100000000033000003

6.	**Farm Name:**	Mamatwan	
	Farm Number:	331	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000033100000
		1	C04100000000033100001
		2	C04100000000033100002
		3	C04100000000033100003
		8	C04100000000033100008
		16	C04100000000033100016
		17	C04100000000033100017
		18	C04100000000033100018
		19	C04100000000033100019

7.	**Farm Name:**	Perth	
	Farm Number:	276	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		RE	C04100000000027600000

8.	**Farm Name:**	York
	Farm Number:	279

		Farm Portion	SG Code
	Portions and SG Codes	0	C04100000000027900000
		1	C04100000000027900001
		2	C04100000000027900002
		8	C04100000000027900008
		11	C04100000000027900011
		13	C04100000000027900013

9.	**Farm Name:**	Olive Pan	
	Farm Number:	282	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000028200000
		1	C04100000000028200001

10.	**Farm Name:**	Gama	
	Farm Number:	283	
	SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000028300000
		1	C04100000000028300001

11.	**Farm Name:**	Telele	
	Farm Number:	312	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000031200000
		1	C04100000000031200001

12.	**Farm Name:**	Dikgathlong	
	Farm Number:	268	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000026800000
		1	C04100000000026800001
		2	C04100000000026800002

13.	**Farm Name:**	Dibiaghomo	
	Farm Number:	226	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000022600000
		1	C04100000000022600001
		2	C04100000000022600002
		3	C04100000000022600003
		4	C04100000000022600004

14.	**Farm Name:**	Boshof	
	Farm Number:	300	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000030000000
		1	C04100000000030000001
		3	C04100000000030000003
		4	C04100000000030000004

15.	**Farm Name:**	Roldraai	
	Farm Number:	333	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000033300000
		1	C04100000000033300001

16.	**Farm Name:**	Drakenstein
	Farm Number:	263

	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000026300000

17.	Farm Name:	East	
	Farm Number:	270	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000027000000
		1	C04100000000027000001
		2	C04100000000027000002

18.	Farm Name:	Umtu	
	Farm Number:	281	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000028100000

19.	Farm Name:	Olivewood	
	Farm Number:	284	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000028400000

20.	Farm Name:	Mooidraai	
	Farm Number:	310	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000031000000

21.	Farm Name:	Kongoni	
	Farm Number:	311	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000031100000
		1	C04100000000031100001

22.	Farm Name:	Klipling	
	Farm Number:	271	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000031100000

23.	Farm Name:	Hotazel	
	Farm Number:	280	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000028000000
		1	C04100000000028000001
		2	C04100000000028000002
		3	C04100000000028000003

24.	Farm Name:	Epsom	
	Farm Number:	285	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000028500000
		1	C04100000000028500001

25.	Farm Name:	Botha	
	Farm Number:	313	
	Portions and SG Codes	Farm Portion	SG Code
		0	C04100000000031300000

26.	Farm Name:	Mukulu	
	Farm Number:	265	
	Portions and SG Codes	Farm Portion	SG Code

		0	C04100000000026500000

27.	**Farm Name:**	Gloria	
	Farm Number:	266	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000026600000
		1	C04100000000026600001

28.	**Farm Name:**	Wessles	
	Farm Number:	227	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000022700000
		1	C04100000000022700001
		2	C04100000000022700002

29.	**Farm Name:**	Tigerpan	
	Farm Number:	286	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000028600000

30.	**Farm Name:**	Belgravia	
	Farm Number:	264	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000026400000
		1	C04100000000026400001

31.	**Farm Name:**	Devon	
	Farm Number:	277	
	Portions and SG Codes	**Farm Portion**	**SG Code**
		0	C04100000000027700000
		1	C04100000000027700001

3. LOCALITY MAP

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

The locality maps is provided in Appendix 3 and in Figure 3-1.

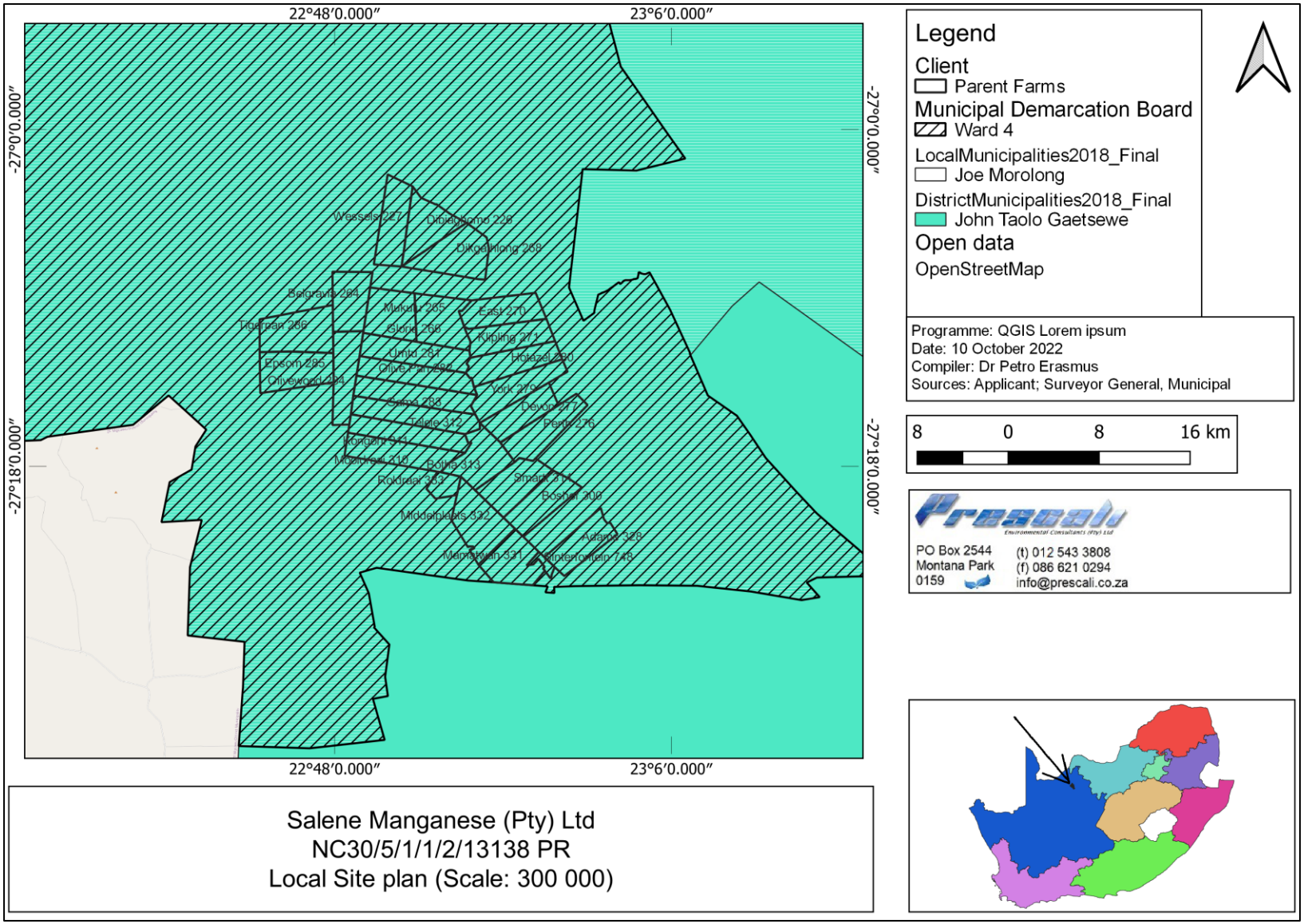

Figure 3-1: Salene Manganese Gloria Prospecting Regional Locality Map (1: 300 000)

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 plan, showing the location of the proposed prospecting activities with a 500 m radius around each point in which prospecting activities will take place, is provided in Figure 4-1.

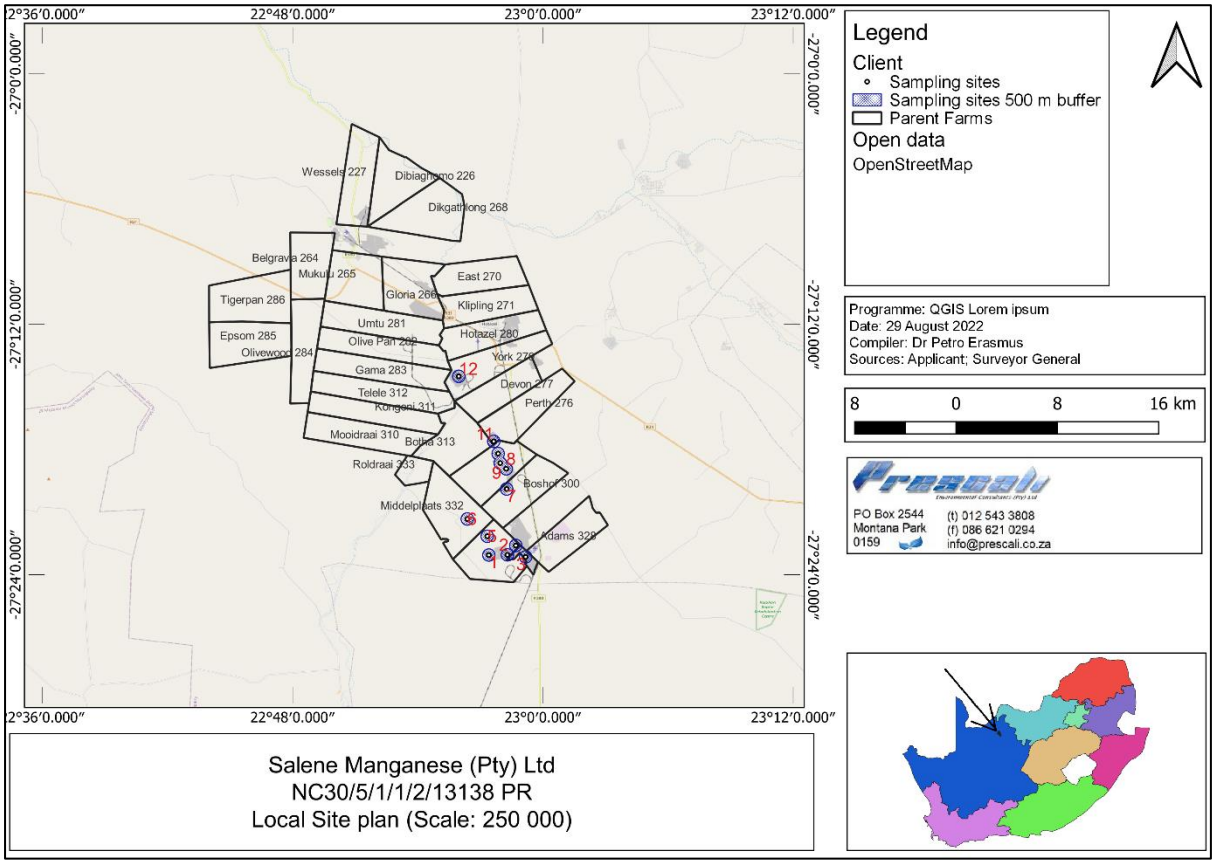

Figure 4-1: Salene Manganese Gloria Prospecting Plan Locality Map

4.1. Non-Invasive Activities:

Desktop Studies: The area is known for Manganese and Iron mining. There are thus a number of existing mines within the target area. Proper consultation will be done with holders of mining rights and prospecting rights to obtain access to the areas before any samples may be taken. Available historic prospecting data will be captured and evaluated, and a working plan of the area on a suitable scale (1:10 000 or 1:20 000) will be compiled. The desktop study will provide guidance with respect of areas to target for soil sampling on existing dumps and disturbed areas.

Mapping: Geologic mapping involves plotting the location and attitude of the various rock units, structures, economic mineral/metal occurrences, etc. as observed in the field on a base map. Geological mapping will be on a scale suitable for the local geological variability. Mapping will be done along lines spaced at regular intervals and oriented perpendicular to the expected north-south striking lithologies in the area. The mapping will primarily focus on the delineation of the KFM Formation to establish the occurrence of minerals that form part of this application.

Compilation of Data, Interpretation and Reporting: This will follow after completion of the non-invasive phase, and before the planning of the first drilling phase (if needed), and will be updated after completion of successive drilling programs (if needed).

Resource estimation: The borehole logs and analytical data/results are captured into an electronic database and validated. 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 grade of the potential precious and base metal deposit.

4.2. Invasive Activities:

Sampling Program: Samples will be taken from existing dumps, tailings, etc. Approximately 10 samples to be collected within a radius of approximately 500 m from each point. 12 Site points have been identified. Each surface sample will not disturb more than 1 m2. Samples will be submitted for analyses to determine the mineral content. Each sample will be logged and split and quartered where assaying is warranted. One quarter will be dispatched to the assay lab, one quarter kept for a permanent record, and the halves utilized for petrological studies or stored for future reference or metallurgical test work. Samples for analysis will be bagged and numbered on site by the geologist and field assistant, and dispatched to the contracted off site accredited laboratory.

Metallurgical Sampling: The mineralized portions of collected samples and boreholes (if needed), as indicated by assay results, would provide sufficient material for metallurgical test work purposes.

Drilling: **Drilling will only be considered after completion of all the sourced historic exploration results and surface samples as described above**. **If the applicant decides to conduct drilling, then an amendment to the Environmental Authorisation will be submitted to the DMR and the BAR will be amended.**

- Rehabilitation of the drill sites will be monitored to ensure compliance with the environmental management programme. In all instances drilling would be:
  - Under close supervision of an experienced geologist;
  - Conducted along best practice guidelines
  - Minimize environmental disturbance.
- An independent and experienced drilling contractor will be used to complete the drilling in compliance with the Mine Health and Safety Act, 1996 (Act No. 26 of 1996). Plastic lining will be employed to prevent oil spillage under the drill rigs and hydrocarbon containers. Borehole sites are GPS located and pegged with PVC flags attached to the stakes. The site is inspected and photographed prior to any disturbance. Minimal clearing of drill pads will be done, keeping disturbance to the native vegetation to an absolute minimum. No topsoil will be removed. After completion of a borehole, the collar position will be marked with a numbered concrete block, of approximately 0.5 x 0.5 x 0.5 meters, fitted with a steel rod of approximately 1 m high.
- After each drill hole is complete, logged and sampled the collar will be surveyed by an independent surveyor using a high-accuracy differential GPS. Thereafter the drill area will be rehabilitated according to the procedures as stipulated in the Environmental Management Plan and photographed. The rehabilitation process will be closely monitored to ensure that standards are not compromised. The drill sites are only considered rehabilitated when the project geologist has signed a standard drill pad rehabilitation checklist.
- The boreholes will be logged and mineralized horizons sampled by qualified geologists.

Bulk sampling and testing to be carried out: Bulk sampling will only be considered if a viable target is identified, as part of a feasibility study into the establishment of a mine, in which case an amendment to the Environmental Authorization will be considered. At this stage no bulk sampling is envisaged. In the event that bulk sample is identified, a separate application in terms of the NEMA will be submitted to the competent authority.

Other prospecting methods to be applied: Normal industry practice in terms of assaying, mineralogical testing and metallurgical testing will be followed. If prospecting results indicate the need for any other method of prospecting, then it will be planned and reported to the Department of Minerals and Energy via the relevant reporting structure.

4.3. Description of Pre-/Feasibility Studies

Any program such as this culminates with an overall completion study and in this case the objective would be to provide a pre-feasibility study at a suitably detailed level to enable the submittal of a Mining Right, NEMA and IWUL applications should the mineral resource be suitable for exploitation.

During the final year all data needs to be compiled, interpreted, summarized and evaluated in a final report. Several additional studies will need to be completed in order for an informed decision to be made on whether or not to proceed with development. Aside from all the information already discussed, expert input is frequently required in geohydrology, processing and plant design, engineering and infrastructure, mining and other specialized fields. In addition, extra specialized studies have been allowed for to cover provision of services (power, water, labour), logistics, consumables, and all other items necessary in a pre- feasibility study.

Consequently, while others costs decline in the final year, the cost of consultants is increased as much of the work is traditionally outsourced.

5. LISTED AND SPECIFIED ACTIVITIES

The activities for which an Environmental Authorisation is need is outlined in Table 5-1.

Table 5-1: Listed Activities applied for

NAME OF ACTIVITY (E.g. For prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route)	**AERIAL EXTENT OF THE ACTIVITY** Ha or m^2	**LISTED ACTIVITY** (Mark with an **X** where applicable or affected).	**APPLICABLE LISTING NOTICE**	**WASTE MANAGEMENT AUTHORIZATION** (Indicate whether an authorization is required in terms of the Waste Management Act). (Mark with an X)
Sampling site	10 x 12 Sampling Site 1 Sample site= 1 m^2 Total Sampling Site Area= 120 m^2	X	GNR 983 (as amended 07 April 2017) Listed Activity 20	
Drill Site	Not Identified at this point, Drilling will depend on the sampling sites	X	GNR 983 (as amended 07 April 2017) Listed Activity 20	
Rehabilitation and Closure	120 m^2	X	GNR 983 (as amended 07 April 2017) Listed Activity 22	

6. POLICY AND LEGISLATIVE CONTEXT

Table 6-1: Applicable Legislation and Guidelines taken into consideration

Applicable legislation and guidelines used to compile the report	**Reference where applied**	**How does this development comply with and respond to the legislation and policy context**
(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);		*(E.g., In terms of the National Water Act a Water Use License has/ has not been applied for)*
The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996) Section 2 of the Constitution states that: "This Constitution is the supreme law of the Republic; law or conduct inconsistent with it is invalid, and the obligations imposed by it must be fulfilled." Section 24 of the CA, states that everyone has the right to an environment that is not harmful	The BAR and EMPr was accordingly prepared and considered within the constitutional framework set	The prospecting application has been submitted in terms of the National

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: • prevent pollution and ecological degradation; • promote conservation; and • secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. Section 24 guarantees the protection of the environment through reasonable legislative (and other measures) and such legislation is continuously in the process of being promulgated. Section 33(1) concerns administrative justice which includes the constitutional right to administrative action that is lawful, reasonable and procedurally fair.	by Section 24 and 33 of the Constitution.	Environmental Management Act
The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Assessment Regulations, 2014 (as amended) The overarching principle of the NEMA is sustainable development. It defines sustainability as meaning the integration of social, economic and environmental factors into planning, implementation and decision making so as to ensure the development serves present and future generations. Section 2 of NEMA provides for National Environmental Management Principles. These principles include: • Environmental management must place people and their needs at the forefront of its concern. • Development must be socially, environmentally and economically sustainable. • Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated. • Environmental justice must be pursued. • Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued. • Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle. • The participation of all Interested and Affected Parties (I&APs) in environmental governance must be promoted.	The BAR and EMPr will be / was distributed for public review for periods stipulated in NEMA as part of the environmental impact assessment process. The document was also compiled to ensure compliance with the requirements as per the EIA regulations. Refer to Table 5-1 of the BAR for the listed activities applicable to the proposed project.	According to the EIA Regulations (GNR 982, 2014) the following will be submitted in support of the application for Environmental Authorisation: BAR / EMP (this document) together with the results of consultation with Interested and Affected Parties (IAPs) and State Departments.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
• Decisions must take into account the interests, needs and values of all I&APs. The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment. • Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law. • The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage. • The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment. The EIA process to be undertaken in respect of the authorization process of the proposed mining operations is in compliance with the MPRDA, as well as the NEMA read with the Environmental Impact Assessment Regulations of 2014 (as amended). The proposed development involves 'listed activities', as identified in terms of the NEMA and in terms of section 24(1), the potential consequences for or impacts on the environment of listed activities must be considered, investigated, assessed and reported on to the Minster of Mineral Resources or to the relevant office of the Department responsible for mineral resources, except in respect of those activities that may commence without having to obtain an environmental authorisation in terms of the NEMA.		
GNR 1147 (20 November 2015) of the NEMA - Financial Provisioning Regulations In accordance with the above legislation, the holder of a mining right must make the prescribed financial provision for the costs associated with the undertaking of the management, rehabilitation and remediation of the negative environmental impacts due to prospecting, exploration and mining activities and the latent or residual environmental impacts that may become known in future.	The Final Rehabilitation, Decommissioning and Mine Closure plan will be compiled in accordance with GNR 1147.	Section 21 of Part A of this report details the calculated financial liability that Salene Manganese (Pty) Ltd must provide for the rehabilitation of the area that is going to be disturbed.
Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) Previously South African mineral rights were owned either by the State or the private sector. This dual ownership system represented an entry barrier to potential new investors. The	An integrated application in terms of the MPRDA and NEMA is being undertaken.	An application for a Prospecting Right was submitted to the DMR for

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
current Government's objective is for all mineral rights to be vested in the State, with due regard to constitutional ownership rights and security of tenure. The MPRDA was passed in order to make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources, and to provide for matters connected therewith. The Preamble to the MPRDA inter alia affirms the State's obligation to: • protect the environment for the benefit of present and future generations; • ensure ecologically sustainable development of mineral and petroleum resources; and • promote economic and social development. The aforesaid preamble affirms the general right to an environment provided for in section 24 of the Constitution (as set out hereinabove). The objects of the MPRDA, as set out in section 2 thereof serve as a guide to the interpretation of the Act. The objects of the MPRDA are as follows: • recognise the internationally accepted right of the State to exercise sovereignty over all the mineral and petroleum resources within the Republic; • give effect to the principle of the State's custodianship of the nation's mineral and petroleum resources; • promote equitable access to the nation's mineral and petroleum resources to all the people of South Africa; • substantially and meaningfully expand opportunities for historically disadvantaged persons, including women, to enter the mineral and petroleum industries and to benefit from the exploitation of the nation's mineral and petroleum resources; • promote economic growth and mineral and petroleum resources development in the Republic; • promote employment and advance the social and economic welfare of all South Africans; • provide for security of tenure in respect of prospecting, exploration, mining and production operations;	The NEMA process for the proposed project is described below.	which an acceptance letter was issued on 01 December 2020.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context

• give effect to section 24 of the Constitution by ensuring that the nation's mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development; and
• ensure that holders of mining and production rights contribute towards the socio-economic development of the areas in which they are operating.
 	
The national environmental management principles provided for in section 2 of the NEMA apply to all prospecting and mining operations and any matter relating to such operation. These principles apply throughout the Republic to the actions of all organs of state including inter alia the Department of Mineral Resources that may significantly affect the environment.
 	
Any prospecting or mining operation must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects in order to ensure that exploitation of mineral resources serves present and future generations.
 	
Section 38 of the MPRDA states that the holder of inter alia, a prospecting right, mining right or mining permit:
• Must at all times give effect to the general objectives of integrated environmental management laid down in Chapter 5 of NEMA;
• Must consider, investigate, assess and communicate the impact of his or her prospecting or mining on the environment as contemplated in section 24(7) of NEMA;
• Must manage all environmental impacts –
  ○ In accordance with an environmental management plan or approved environmental management programme, where appropriate, and
  ○ As an integral part of the prospecting or mining operations, unless the Minister directs otherwise.
• Must as far as reasonably practicable, rehabilitate the environment affected by the prospecting or mining operations to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and
• Is responsible for any environmental damage, pollution or ecological degradation as a result of prospecting or mining operations and which may occur inside and outside the boundaries of the area to which such right, permit or permission relates.		

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
National Water Act, 1998 (Act No. 36 of 1998 (NWA) In terms of the NWA, the National Government, acting through the Minister of Water Affairs, is the public trustee of South Africa's water resources, and must ensure that water is protected, used, development, conserved, managed and controlled in a sustainable and equitable manner for the benefit of all persons (section 3(1)). In terms of the NWA a person may only use water without a license under certain circumstances. All other use, provided that such use qualifies as a use listed in section 21 of the Act, require a water use license. A person may only use water without a license if such water use is permissible under Schedule 1 (generally domestic type use) if that water use constitutes a continuation of an existing lawful water use (water uses being undertaken prior to the commencement of the NWA, generally in terms of the Water Act of 1956), or if that water use is permissible in terms of a general authorisation issued under section 39 (general authorisations allow for the use of certain section 21 uses provided that the criteria and thresholds described in the general authorisation is met). Permissible water use furthermore includes water use authorised by a license issued in terms of the NWA. Section 21 of the NWA indicates that "water use" includes: • taking water from a water resource (section 21(a)); • storing water (section 21(b)); • impeding or diverting the flow of water in a water course (section 21(c)); • engaging in a stream flow reduction activity contemplated in section 36 (section 21(d)); • engaging in a controlled activity which has either been declared as such or is identified in section 37(1) (section 21(e)); • discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit (section 21(f)); • disposing of waste in a manner which may detrimentally impact on a water resource (section 21(g); • disposing in any manner of water which contains waste from, or which has heated in, any industrial or power generation process (section 21 (h)); • altering the bed, banks, course or characteristics of a water course (section 21(i));	Refer to Section 10.8 where the baseline water resource of the project area is characterised.	None of the 12 potential sampling areas and the 500 m radius for potential sampling will be in proximity to a watercourse or wetland, thus no listed activities in terms of the NWA are triggered by the proposed project. The appointed contractor will be responsible for providing any water requirements they may need. No abstraction boreholes will be drilled.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
• removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people (section 21(j)); and • using water for recreational purposes (section 21(k)). In addition to the above and in terms of section 26 of the NWA, Regulations on the Use of Water for Mining and Related Activities Aimed at the Protection of Water Resources were published in GN R. 704 of 4 June 1999 (GN R. 704). The aforesaid GN R. 704 provides for inter alia the capacity requirements of clean and dirty water systems (Regulation 6), the protection of water resources by a person in control of a mine (Regulation 7), security and addition measures (Regulation 8) and temporary or permanent cessation of a mine or activity (Regulation 9). According to GN R. 704 “no person in charge of a mine may carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood-line or within a horizontal distance of 100 metres from any watercourse or estuary, whichever is the greatest”. Insofar as the undertaking of section 21 water uses is concerned, it is anticipated that application for registration and water use licensing will be undertaken.		
National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) The NHRA established the South African Heritage Resources Agency (SAHRA) as well as Provincial Heritage Resources Agencies. In terms of the NHRA, no person may destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of any heritage site without a permit issued by the heritage resources authority responsible for the protection of such site. No person may damage, disfigure, alter, subdivide or in any other way develop any part of a protected area unless, at least 60 days prior to the initiation of such changes, he/she/it has consulted with the relevant heritage resources authority. Section 34 of the NHRA provides for the protection of immovable property by providing for a prohibition on altering or demolishing any structure or part of any structure, which is older than 60 years, without a permit issued by the relevant provincial heritage resources authority. Accordingly, should the proposed activities, prospecting or mining activities or the closure and rehabilitation of mined land involve the altering or demolishing of any structure or part of any structure, which is older than 60 years, a permit issued by the relevant provincial heritage resources authority is required.	Refer to Section 10.	None of the listed activities in terms of the NHRA are triggered by the proposed project as the prospecting activities will not transform the character of the already disturbed site.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite; destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite; trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites. No person may, without a permit issued by SAHRA or a provincial heritage resources authority destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves; destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or bring onto or use at the burial ground or grave referred to above any excavation equipment or any equipment which assists in the detection or recovery of metals. Section 38 of the NHRA states that any person who intends to undertake developments categorised in Section 38 of the NHRA must at the very earliest stages of initiating such development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development. By way of example, the developments referred to in Section 38 of the NHRA include: • the Site Establishment of a road, wall, power-line, pipeline, canal or other similar form of linear development or barrier exceeding 300 metres in length; • the Site Establishment of a bridge or similar structure exceeding 50 metres in length; • any development or other activity which will change the character of a site as specified in the regulations; • any other category of development provided for in regulations by SAHRA or the provincial heritage resources authority.		

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
However, the abovementioned provisions are subject to the exclusion that section 38 does not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act No. 73 of 1989 (EIA) (now presumably the NEMA in view of the repeal of the listed activities under the ECA: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.		
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) The NEMBA aims to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith. The NEMBA provides for the publishing of various lists of species and ecosystems by the Minister of Environmental Affairs and Tourism (now the Minister of Water and Environmental Affairs) as well as by a Member of the Executive Council responsible for the conservation of biodiversity of a province in relation to which certain activities may not be undertaken without a permit. In terms of Section 57 of the NEMBA, no person may carry out any restricted activity involving any species which has been identified by the Minister as "critically endangered species", "endangered species", "vulnerable species" or "protected species" without a permit. The NEMBA defines "restricted activity" in relation to such identified species so as to include, but not limited to, "hunting, catching, capturing, killing, gathering, collecting, plucking, picking parts of, cutting, chopping off, uprooting, damaging, destroying, having in possession, exercising physical control over, moving or translocating".\ The Minister has made regulations in terms of section 97 of the NEMBA with regards to Threatened and Protected Species which came into effect on 1 June 2007. Furthermore, the Minister published lists of critically endangered, endangered, vulnerable and protected species in terms of section 56(1) of the NEMBA.	The legislation was considered throughout the EIA process and in particular the Ecological Impact Assessment which will comply with the NEMBA.	Species of conservation concern which are typically associated with the prospecting area are Kuruman Thornveld, Kuruman Mountain Bushveld, Kathu Bushveld; and Olifantshoekd Plains Thornveld, however, habitat for these species within the 500 m radius of the 12-sampling area are limited due to the disturbed nature thereof. Permits may be required in terms of NEMBA in the unlikely event that species of conservation concern have habituated within the sampling footprint at any desired sampling location. Potential sampling sites (if necessary) will, however, target already disturbed areas.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
National Forestry Act, 1998 (Act No. 84 of 1998) The purpose of this Act is to promote the sustainable management of forests. Everyone has the constitutional right to have the environment protected for the benefit of present and future generations; Natural forests and woodlands form an important part of that environment and need to be conserved and developed according to the principles of sustainable management; Plantation forests play an important role in the economy; Plantation forests have an impact on the environment and need to be managed appropriately; The State's role in forestry needs to change; and The economic, social and environmental benefits of forests have been distributed unfairly in the past.	There are no natural or plantation forests applicable to the application area.	There are no natural or plantation forests applicable to the application area.
Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009) **The purpose of this act is:** To provide for the sustainable utilisation of wild animals, aquatic biota and plants; to provide for the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; to provide for offences and penalties for contravention of the Act; to provide for the appointment of nature conservators to implement the provisions of the Act; to provide for the issuing of permits and other authorisations; and to provide for matters connected therewith. Potentially important Sections are: **47. Pollution of aquatic systems** (1) No person may deposit or cause or allow to be deposited - (a) in an aquatic system; or (b) in any place from where it is likely to percolate into or in any other manner enter an aquatic system, anything, whether solid, liquid or gaseous, which is or is likely to be injurious to fish or fish food or which, if it was so deposited in large quantities or numbers, would be injurious to fish. (2) No person may destroy or cause or allow to be destroyed aquatic habitat in an aquatic system, riparian vegetation or instream spawning habitat. **51. Picking, receipt, possession, acquisition or handling of indigenous plants** (1) No person may, without a permit, pick an indigenous plant - (a) on a public road; (b) on land next to a public road within a distance of 100 meters measured from the centre of the road; or (c) within an area bordering a natural water course, whether wet or dry, up to and within a distance of 100 metres from the middle of a river on either side of the natural water course. (2) No person may, without a permit, pick an indigenous plant in such manner that it constitutes large-	Part A, Section 4 and Part B, Sections 4, 5 and 6	No hunting of animals will take place. No animals will be kept / restrained / poisoned. No fishing will take place Activities will not take place within 500 m from a delineated watercourse. No protected plant species will be impacted. No indigenous plants will be picked – activities to be kept to disturbed areas. Should any indigenous plant species be observed during the sampling activities the landowners / lawful occupiers will be informed.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
scale harvesting or for commercial purposes. (3) No person may collect firewood or pick, transport or remove an indigenous plant on land of which such person is not the owner without the owner's written permission. (4) Subsection (1)(a) and (b) do not apply to the land owner or his or her relative picking an indigenous plant which is not a specially protected or protected plant. (5) No person may - (a) receive an indigenous plant knowing that it was not picked lawfully; (b) possess an indigenous plant in respect of which there is a reasonable suspicion that it was not picked lawfully and be unable to give a satisfactory account of such possession; or (c) acquire or receive into his or her possession or handle an indigenous plant without having reasonable cause for believing, at the time of such acquisition, receipt or handling of such plant, that it was picked lawfully.		
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEMAQA) The NEMAQA came into power on the 24th of February 2005. Additionally, the amendment to the Minimum Emission Standards (GN R 893) also came into effect on the 12 June 2015. This Notice provides a list of activities that may cause atmospheric emissions which have or may have a significant detrimental effect on the environment as well as the minimum emission standards ("MES") for these activities as contemplated in section 21 of NEMAQA. The effect of the commencement of the NEMAQA and the listed activities, listed in GN 964 is that an atmospheric emission licence (AEL) is now required for conducting these listed activities.	There are no listed activities that require registration/permitting according to NEMAQA for the proposed prospecting activities.	No listed activities in terms of the NEMAQA are triggered by the proposed project. Therefore, no AEL is required. Activities associated with the proposed project are unlikely to result in exceedances of the air quality standards.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA) The NEMWA commenced on 1 July 2009 and as a result of its commencement the relevant provisions in the Environment Conservation Act No. 73 of 1989 (ECA) in respect of waste management, were repealed. The NEMWA sets out to reform the law regulating waste management and deals with waste management and control more comprehensively than was dealt with in the ECA. It also introduces new and distinct concepts never before canvassed within the realm of waste management in South Africa, such as the concept of contaminated land and extended producer responsibility. It also provides for more elaborate definitions to assist in the interpretation of the Act. Section 19 of the NEMWA provides for listed waste management activities and states in terms of section 19(1), the Minister may publish a list of waste management activities that have, or	There are no listed activities that require registration/permitting according to NEMWA for the proposed prospecting activities	No Listed activities in terms of NEMWA are triggered by the proposed project. Therefore, no Waste Management Licence (WML) is required. Activities associated with the proposed project are unlikely to result in exceedances in the thresholds for waste storage.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
are likely to have a detrimental effect on the environment. Such a list was published in GNR 921 of 29 November 2013. In accordance with section 19(3), the Schedule to GNR 921 provides that a waste management licence is required for those activities listed therein prior to the commencement, undertaking or conducting of same. In addition, GNR 921 differentiates between Category A, B, and Category C waste management activities. Category A waste management activities are those which require the conducting of a basic assessment process as stipulated in the EIA Regulations, 2014 promulgated in terms of the NEMA as part of the waste management licence application and Category B waste management activities are those that require the conducting of a scoping and environmental impact assessment process stipulated in the EIA Regulations, 2014 as part of the waste management licence application. Category C waste management activities do not require a waste management licence, however a person who wished to commence, undertake or conduct a waste management activity listed under this category, must comply with the relevant requirements and standards, Section 20 of the NEMWA pertains to the consequences of listing waste management activities and states that no person my commence, undertake or conduct a waste management activity, except in accordance with the requirements or standards for that activity as determined by the Minister or in accordance with a waste management licence issued in respect of that activity, if a licence is required. In terms of the current statutory framework with regards to waste management, a waste management licence is required for those waste management activities identified in the Schedule to GNR 921. Certain of the waste management activities listed in the Schedule are governed by specific thresholds. Where any process or activity falls below or outside the thresholds stipulated, a waste management licence is not required.		It is however noted that any minimal waste produced on site should be transferred to the nearest licensed waste disposal facility.
Integrated Development Plans and Environmental Management Frameworks		
John Taolo Gaetsewe District Municipality IDP 2017-2022[1]	Part A, Section 10.12.	The aim of the project is to determine if any of the

[1] https://www.cogta.gov.za/cgta_2016/wp-content/uploads/2020/12/JOHN-TAOLO-FINAL-IDP-17-18-1.pdf 24 August 2022

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the legislation and policy context
From the DM IDP it is noted that the population in the Joe Morolong LM is decreasing and there is a need to ensure that service delivery in this LM is increased to make it comparable to the other LMs in the DM. "*Unemployment is a serious problem in the district area. 8.24% of the total population and 26% of the economically active people is unemployed. The situation is especially bad in the area of the Joe Morolong LM. The area's job opportunities are provided by three primary economic sectors, which are agriculture, mining and retail. The other job opportunities essentially feed of these three sectors. Following the national trend, it is clear from the above-mentioned statistics that job creation must be a key priority consideration for the Municipality in formulating its strategies."* In 2011 the Jpe Morolong LM had an unemployment rate of 38.7%. The IDP identified housing development and increase in service delivery and infrastructure as a priority in the Joe Morolong LM.		minerals included it the application is viable for exploitation which could open additional employment opportunities in the Local Municipality.
Joe Morolong Local Municipality IDP 2021/2022[2] Key Performance Area4 of the IDP speak to Local Economic Development and the Councill made a resolution to create as many employment opportunities as possible. The dominant employment / economic sectors are tourism, mining and agriculture but other sectors can be exploited as well, these include construction and manufacturing. Within ward 4 (in which the application area is located) increase in basic service delivery and infrastructure was identified as key performance areas, these include water, housing, recreational facilities, electricity and road services in addition to the promotion of a safe and clean environment.	Part A, Section 10.12.	The aim of the project is to determine if any of the minerals included it the application is viable for exploitation which could open additional employment opportunities in the Local Municipality.
Review Of Spatial Development Framework John Taolo Gaetsewe DM[3] From this report, Spatial structuring element 3: Mines and Mining activities it is noted that mining is one of the major drivers of the economy and th spatial structure of the LM. Two linear strips are identified: the Gamagara Mining corridor that is located between Postmasburg and Hotazel and the Asbestos no-go area. "*Expansion of the mining industry should be supported in such a way that negative impacts are minimised and distressed mining communities are supported.*"	Part A, Section 10.12.	The aim of the project is to determine if any of the minerals included it the application is viable for exploitation which could open additional employment opportunities in the Local Municipality.

[2] http://www.joemorolong.gov.za/Documents/NC%20451%20ADOPTED%20IDP%202021-22%20FINANCIAL%20YEAR.pdf 24 August 2022
[3] https://taologaetsewe.gov.za/wp-content/uploads/2020/07/JTG-SDF-Review-Phase-5-July-2017.pdf 24 August 2022

7. 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).

Salene Manganese will investigate the occurrence and economic viability of **other minerals** that may occur in areas that have been investigated in detail by many companies in the past for Manganese and Iron only. This will provide information on potential other economically viable mineral resources that could be mined to create employment. As only disturbed areas will be targeted during the prospecting phase as applicable to this report and application, very little or no impacts should occur. Figure 4-1 shows the 500 m radius area around the 12 identified point areas for the proposed prospecting activities.

As far as possible, the areas to be prospected (sampled) on will be already disturbed and at largely active mining areas or existing residue stockpile / deposit areas, no other areas will be disturbed especially any greenfields areas linked to ecologically sensitive area (ESA). The least intrusive method (shovels) will be used to conduct the preliminary assessment and if needed drilling will take place within the same disturbed areas reducing the negative impacts on the environment**. NOTE: Drilling will only be considered once surface sampling proves successful. This BAR only covers surface sampling activities. Should drilling be considered than an amendment to the environmental authorization will be applied for.**

As an industrial age society, we make use of various metals or materials constructed from metals. The prospecting programme is needed to determine if the minerals below is available for exploitation as new resources are needed to replace areas where mining may have been finalised or to meet an increasing demand. Potential uses of the minerals included in the prospecting application is outlined below.

Table 7-1: Uses of the minerals applied for

Metal	Potential uses
Aluminium (Al)	Aluminium and its alloys are used in aircraft construction, building materials, electrical conductors, chemicals, food processing equipment and in consumer durables such as refrigerators, air conditioners, cooking utensils.[4]
Arsenic (As)	Overall, consumption of arsenic is small (few hundred tons per year) and it is used in metallurgical application as a result of its metalloid properties e.g., manufacture of lead shot and it improves the thermal and mechanical properties of lead, it also improves th corrosive resistance and thermal properties of copper and brass. Purified arsenic is used with silicon and germanium in semiconductor technologies [5]
Barium (Ba)	Used for the manufacture of spark plug electrodes, vacuum tubes, florescent lamps and in the oil and gas industries to make drilling mud that lubricates the drill. In addition, it is also used to make paint, bricks, tiles glass, rubber and in fireworks[6].
Bismuth (Bi)	This element is a useful component of type-metal alloys due to its low melting point and expansion on solidification, it is thus used in fire-detection equipment and thermoelectric devices.[7]
Cadmium (Cd)	AS an anti-corrosion element it is used in electroplating of steel iron, copper, brass and other alloys. Cadmium is also used as anodes with nickel or as the cathode with silver oxide.[8]
Caesium (Cs)	Caesium is used to scavenge traces of oxygen and other gases in electron tubes and as a catalyst and in photoelectric cells, ion propulsion systems, atomic clocks, and plasma for thermoelectric conversion.[9]
Cobalt (Co)	Cobalt is a component of various alloys that are used in the manufacture of aircraft engines, gas turbines, high speed steels. It is also used in magnets and magnetic recording devises, a catalyst in the petroleum and chemical industries and as a drying agent in paints and ink. The radioactive isotope Co-60 is used in medical treatment and to irradiate food for preservation and consumer protection[10].

[4] https://www.britannica.com/science/aluminum 24 August 2022
[5] https://www.britannica.com/science/arsenic 24 August 2022
[6] https://byjus.com/chemistry/barium/ 4 November 2021
[7] https://www.britannica.com/science/bismuth#ref280550 24 August 2022
[8] https://www.britannica.com/science/cadmium#ref225131 24 August 20202
[9] https://www.britannica.com/science/cesium 24 August 2022
[10] https://byjus.com/chemistry/cobalt/ 4 November 2021

Metal	Potential uses
Copper (Cu)	Used in the creation of various alloys such as bronze. Other uses are: agricultural poison, algicide in water purification and in a number of goods such as coins, cans, cooking foil, saucepans, electricity cables, planes, and space vehicles[11].
Lead (Pb)	Lead is very ductile, easy to we'd, has a low melting point, high density and absorb gamma radiation and X-radiation and is an excellent solvent. Uses includes the manufacturing of e.g. protective shielding, storage batteries, ammunition and a solder.[12]
Lithium (Li)	Used in batteries, Lithium also has the potential to be used as a heat transfer fluid for high power density nuclear reactors as a primary coollant. Lithium is also used in the treatment of manic-depression.[13]
Magnesium (Mg)	Medicinal uses of Magnesium include treatment of skin related problems, Attention Deficit - Hyperactivity disorder (ADHD), anxiety, mania, and recovery after surgery. It is also used in flashbulbs[14]. Magnesite is used as a refractory metal, catalyst and a filter in the production of synthetic rubber as well as in the preparation of fertilisers[15].
Molybdenum (Mo)	Due to its high melting temperature, Molybdenum is used in high temperature steels and in e.g. reaction vessels, aircraft, missiles, automobile parts, electrodes, heating elements and filament supports as well as in pigments and catalysts.[16]
Nickel (Ni)	Nickel has the capacity to resist erosion and thus is used in the production of coins (money), wires, gas turbines, rocket engines, and alloys used for armour plating, nails and pipes. In combination with copper (Monel alloys) it is resistant to sweater corrosion and thus is used in propeller shafts of boats and desalination plants.[17]
Platinum and Palladium, Platinum Group Metals (PGM)	Platinum and palladium are part of the Platinum Group Metals[18]. That is known for their purity, high melting points, catalytic / oxidation and reduction properties and corrosion resistance, PGMs are utilized in various industrial processes, technologies and commercial applications. Consumer and industrial products include flat panel monitors, glass fibre, medical tools, computer hard drives, nylon and razors. Platinum, palladium and rhodium are also used as autocatalysis and pollution control in the automotive sector.
Potassium (K)	This element is essential for life and is present in all soils and in organisms it assist in electrochemical impulse transmission and in transport across cell memebranes. Uses in fertilizer, producing other compounds and making liquid soaps and detergents and in preparing various salts.[19]
Phosphorous (P)	Uses include rodenticide, military smokescreen, semiconductors, fertilisers, safety matches, fireworks, plasticizers, gasoline additives, insecticides (e.g., parathion), and nerve gases. In living organisms it is a component of DNA and RNA, ATP, and bone.[20]
Rare Earth Elements (REE)	The REE group consists of **yttrium** (specifically mentioned in the application acceptance letter) and the 15 lanthanide elements of which three are specifically mentioned in the application acceptance letter (**lanthanum, cerium, neodymium**), others are: praseodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium)[21]. They are used as components in high technology devices such as smart phones, digital cameras, computer hard disks, fluorescent and light-emitting-diode (LED) lights, flat screen televisions, computer monitors, and electronic displays. Some REE's are also used in clean energy and defence technologies. Depending on the element it is also used in lights, screens, and glass, as catalysts, in magnets, batteries and steel alloys.[22]

[11] https://byjus.com/chemistry/copper/ 4 November 2021
[12] https://www.britannica.com/science/lead-chemical-element#ref278864 24 August 2022
[13] https://www.britannica.com/science/lithium-chemical-element#ref278857 24 August 2022
[14] https://byjus.com/chemistry/magnesium/ 4 November 2021
[15] https://www.britannica.com/science/magnesite 4 November 2021
[16] https://www.britannica.com/science/molybdenum 24 August 2022
[17] https://byjus.com/chemistry/nickel/ 4 November 2021
[18] https://www.platinumgroupmetals.net/pgm-markets/default.aspx 4 November 2021
[19] https://www.britannica.com/summary/potassium 24 August 2022
[20] https://www.britannica.com/summary/phosphorus-chemical-element 24 August 2022
[21] https://geology.com/articles/rare-earth-elements/ 4 November 2021
[22] https://www.americangeosciences.org/critical-issues/faq/how-do-we-use-rare-earth-elements 4 November 2021

Metal	Potential uses
Rubidium (Rb)	This metal spontaneously ignites in air and reacts violently with water and is used in photelectric cell and as a "getter" in electron tubes to scavenge the traces of sealed-in gasses.[23]
Silver (Ag)	A very good conductor of electricity and heat it is used in the manufacturing of solar panels, photography and electronic devices, thermal or infrared coatings and air conditioners. It is also used as currency in some countries and for jewellery and silverware. Other applications are uses as antibiotic coatings on medical devices and in purifier in water filers[24].
Silicon (Si)	Silicon occurs naturally in plants and some animals and is used in semiconductors, electronic circuits, switching devices, computer chips transistors, diodes and as as a reducing agent in steel, brass and bronze.[25]
Strontium (Sr)	Strontium is used in flares, fireworks and trace bullets. Negative impacts of this element is that it can replace calcium in food, concentrate in bones and teethy and cause radiation injury.[26]
Sulphur (S)	Sulphur is used in amino acids, insecticides, solvents and in making rubber and rayon.[27]
Scandium (Sc)(REE)	Very few uses have been developed[28] but are used in the aerospace industry, sports equipment and mercury vapour lamps that are used in the film and television industry to replicate sunlight[29]
Tantalum (Ta)	Tantalum is used as a filament for evaporating metals, high refraction glass (e.g. camara lenses)electrolytic capacitors, vacuum furnace parts, chemical process equipment, nuclear reactors, aircraft and missile parts in addition to surgical appliance as it is immune to body liquids[30]
Tungsten (W)	This metal has the highest melting point, greatest high-temperature strength, and lowest thermal expansion coefficient of any metal and is used in steels, lightbulb filaments, electrical contacts, rocket nozzles, chemical apparatus, high-speed rotors, and solar-energy devices.[31]
Titanium (Ti)	Resistant to corrosion, titanium is used in desalination plants, titanium oxide is used in paints and as it is strong while being lightweight it is used in aircrafts[32].
Vanadium (V)	As an alloy it is used with steel and iron for high-speed tool steel, high-strength low-alloy steel, and wear-resistant cast iron. Unalloyed, it is used in high-temperature applications, as a target in X-ray applications, and as a catalyst.[33]
Zinc (Zn)	Used in galvanising iron, steel and other metals it is also an essential trace element in red blood cells. Other uses include pigments, ultraviolet light absorber, dietary supplement, seed treatment and photoconductors in addition to pesticides, fluxes and wood preservatives.[34]

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 infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

The identification of alternatives is a key aspect of the success of the evaluation process. All reasonable and feasible alternatives was identified and screened to determine the most suitable alternative to

[23] https://www.britannica.com/science/rubidium 24 August 2022
[24] https://byjus.com/chemistry/silver/ 4 November 2021
[25] https://www.britannica.com/summary/silicon 24 August 2022
[26] https://www.britannica.com/summary/strontium 24 August 1022
[27] https://www.britannica.com/summary/sulfur 24 August 2022
[28] https://www.britannica.com/summary/scandium 24 August 2022
[29] https://www.chemicool.com/elements/scandium.html#:~:text=Scandium%20is%20used%20in%20aluminum,the%20film%20and%20television%20industry. 24 August 2022
[30] https://www.livescience.com/38994-facts-about-tantalum.html 24 August 2022
[31] https://www.britannica.com/summary/tungsten-chemical-element 24 August 2022
[32] https://byjus.com/chemistry/titanium/ 4 November 2021
[33] https://www.britannica.com/summary/vanadium 24 August 2022
[34] https://www.britannica.com/summary/zinc 24 August 2022

consider and assess. There are however some significant constraints that have to be taken into account when identifying alternatives for a project of this scope. Such constraints include financial, environmental and social issues, which will be discussed in the evaluation of the alternatives.

Alternatives can typically be identified according to:

- Location alternatives;
- Process alternatives;
- Technological alternatives; and
- Activity alternatives (including the No-go option).

For any alternative to be considered feasible such an alternative must meet the need and purpose of the development proposal without presenting significantly high associated impacts.

Alternatives can also be distinguished into discrete or incremental alternatives. Discrete alternatives are overall development options, which are typically identified during the pre-feasibility, feasibility and or basic assessment phases of the EIA process. Incremental alternatives typically arise during the EIA process and are usually suggested as a means of addressing identified impacts. These alternatives are closely linked to the identification of mitigation measures and are not specifically identified as distinct alternatives. This section provides information on the development footprint alternatives, the properties considered, as well as the type of activity, activity layout, technological and operational aspects of the activity.

8.1. Details of the alternatives considered

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

8.1.1. Property on which or location where it is proposed to undertake the activity.

The properties on which the proposed prospecting activities will be located are within various properties in the Joe Morolong Local Municipality (LM), see Section 2 and Figure 3-1 as outlined above. Additional properties were applied for but were not included in the approval from the DMR as mineral rights are already allocated: Heuningdraai 334, Constantia 309, Riviera 335, Simonndium 308, Nchwaning 267, Goold 329 and Santoy 230. By its nature, the prospecting activities is a study to confirm which minerals are present in a specific area and if it is present in exploitable amounts, therefore no other properties were investigated for this application.

8.1.2. Type of activity to be undertaken

Refer to Section 4 for a full description of proposed activities. Prospecting activities will follow a non-invasive and as a last option, invasive methods. The invasive methods will as far as possible be on areas that are already disturbed and at largely active mining areas or existing residue stockpile areas, no other areas will be disturbed especially any greenfields areas linked to ecologically sensitive area (ESA). In extreme circumstances (phase two and does not form part of this application) using drilling riggs may be required should further exploration be identified. Should additional drilling be needed and amendment to the EMPr and Environmental Authorisation will be applied for.

The option of conducting conventional prospecting activities such as trenching was not considered because of the environmental implication and as the majority of the area targeted has already been disturbed by ongoing / historical mining and bulk sampling activities.

8.1.3. Design or layout of the activity

The location of the 12 sample point areas was determined taking into consideration location of existing mining and disturbed areas and a 500 m radius will allow sufficient space to collect samples to provide a good overview of the potential resource. The proposed layout will reduce the potential environmental impact as it will be located within already disturbed areas.

The alternative is to expand the location of the 12 sample sites to cover the whole of the prospecting area, this may result in environmental impacts on areas that are not currently disturbed by mining activities and is not the preferred option. In addition, by focussing on the already disturbed area, the

presence of the minerals under investigation will inform the way forward and if additional exploration will be needed.

8.1.4. Technology to be used in the activity

Samples will be taken from existing residue deposits and stockpiles; no other areas will be disturbed especially any greenfields areas linked to ecologically sensitive area (ESA). Approximately 10 samples to be collected within a radius of approximately 500 m from each of the 12 sample points that have been identified (Figure 4-1). The preferred option is to use manual labour making use of picks and shovels to collect samples. As the proposed 12 locations may be located within active mining areas the required permissions will be sourced and induction as needed will be undertaken to ensure compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996) (MHSA) and any site-specific requirements.

Should drilling be identified as a next phase and amendment to the BAR/EMPr and Environmental Authorisation will be applied for.

8.1.5. Operational aspects of the activity.

Operational aspects are the continuation of the existing mining activities at the proposed 12 sampling points, these should not be impacted by the proposed prospecting activities therefore arrangements with the responsible persons / entities will be made. Any person that will perform the sampling activities as applicable to this application will comply with the MHSA and site-specific requirements.

8.1.6. Option of not implementing the activity.

The proposed prospecting activities will have very little disturbance to the environment as the sampling will take place on/within existing residue deposits / stockpiles.

The no go-option means that the mine dumps, pits and excavations will remain as is and there will be no further prospecting activities that will take place in the area. In addition, no information on the presence of the applicable minerals and if they are present in exploitable amounts will be determined.

9. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

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

This section of the report provides an overview of the tasks undertaken for the Public Participation Process (PPP) to date. The PPP was conducted in terms of Chapter 6 of the NEMA and included the following:

a) Identification of key Interested and Affected Parties (affected and adjacent landowners) and other stakeholders (organs of state and other parties);
b) Placement of site notices on farms, and other accessible public areas;
c) Formal notification via email, fax and post of the application to key Interested and Affected Parties and other stakeholders;
d) Consultation and correspondence with I&APs and Stakeholders and the addressing of their comments; and
e) Newspaper advertisements.

The objectives of PPP include:

- Provides Interested and Affected parties (I&APs) with an opportunity to voice their support, concerns and raise questions regarding the project, application or decision;
- Provides an opportunity for I&APs, Environmental Assessment Practitioners (EAPs) and the Competent Authority (CA) to obtain clear, accurate and understandable information about the environmental, social and economic impacts of the proposed activity or implications of a decision;
- Provides I&APs with the opportunity of suggesting ways of reducing or mitigating negative impacts of an activity and for enhancing positive impacts; and
- Enables the applicant to incorporate the needs, preferences and values of affected parties into the application.

The PPP must comply with several important sets of legislation that require public participation as part of an application for authorisation or approval; namely:

- The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002 - MPRDA); and
- The National Environmental Management Act, 1998 (Act No. 107 of 1998 - NEMA).

Adherence to the requirements of the above-mentioned Acts will allow for an Integrated PPP to be conducted, and in so doing, satisfy the requirement for public participation referenced in the Acts.

During the process, the following methods are used to develop a stakeholder database which will be utilised to ensure a proper representation of stakeholders interested in or affected by the proposed Project.

This included the following:

- Search works and desktop searches are conducted in and around the project area to verify land ownership and obtain contact details;
- Responses received from newspaper advertisements, public notices and site notices;
- Responses received from distribution of the Information Pamphlet with map and Registration form;
- Identification and consultation with stakeholders including commenting authorities (local and district municipalities);
- Organs of state, other than the competent authority, such as the Department of Agriculture, Forestry and Fisheries (DAFF) having jurisdiction in respect of any aspect of the proposed project and affected authorities; and
- Consultations with affected landowners.

The PPP commenced on 25 August 2022 when the information pamphlet was posted and emailed to the I&APs for which contact details could be sourced using a Google™ search. A site visit which included the placing of site notices in and around the fences of the various farms was done on 30 and 31 August 2022 by Ms Alicia Opperman. A registration period commenced on 25 August 2022 and I&APs was requested to register before or on 30 September 2022. The notification includes:

- Newspaper advertisement: published in Kathu Gazzette on 27 August 2022 Page 2;
- Site Notices: erected at various points on 30 and 31 August 2022;
- Public Notices: distributed to identified stakeholders, landowners and residence (where possible) on 30 and 31 August 2022 and throughout the registration period as requested;
- To allow sufficient time for pre-identified I&APs for which no email, telephone or fax was available, notices was posted using registered mail on 25 August 2022; and
- Faxes and emails were forwarded to pre-identified I&APs on 25 August 2022.

Consultation meetings will be held with registered I&APs via a Virtual platform and an In Person meeting to be held in Hotazhel. Various Virtual meetings will be held by I&APs as per their preferrance and an on site meeting will be held in Hotashel (date to be confirmed at date of printing).

All pre-identified and registered I&APs will be notified of the availability of the Basic Assessment Report for public view for a period of 30 days (20 October 2022 to 20 November 2022) within which the report can be reviewed and comments forwarded to the environmental consultant. Consultation sheets and a comments and issue register will be included in the BAR as submitted to the DMR.

9.1. Summary of issues raised by I&APs

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

This section will be updated following the public participation process.

Table 9-1: Summary of issues raised by I &APs

Interested and Affected Parties		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.					
AFFECTED PARTIES					
Landowner/s	X				
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties	X				
Municipal councillor	X				
Municipality	X				
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					

Interested and Affected Parties	Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
Communities				
Dept. Land Affairs				
Traditional Leaders				
Dept. Environmental Affairs				
Other Competent Authorities affected				
OTHER AFFECTED PARTIES				
INTERESTED PARTIES				

10.THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES.

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

10.1. Regional Location

The prospecting application area is located within Ward 4 of the Joe Morolong Local Municipality and John Taolo Gaetsewe District Municipality (Figure 10-1) on the following farms: Olive Pan 282, Gama 283, Telele 12, Dikgathlong 268, Dibiaghomo 226, Boshof 300, Roldraai 333, Drakenstein 263, East 270, Umtu 281, Olivewood 284, Mooidraai 310, Kongoni 311, Smartt 314, Middleplaats 332, Klipling 271, Hotazel 280, Epsom 285, Tigerpan 286, Botha 313, Mukulu 265, Gloria 266, Wessls 227, Adams 328, Belgravia 264, Mamatwan 331, Sinterfontein 748, York 279, Devon 277 and Perth 276.

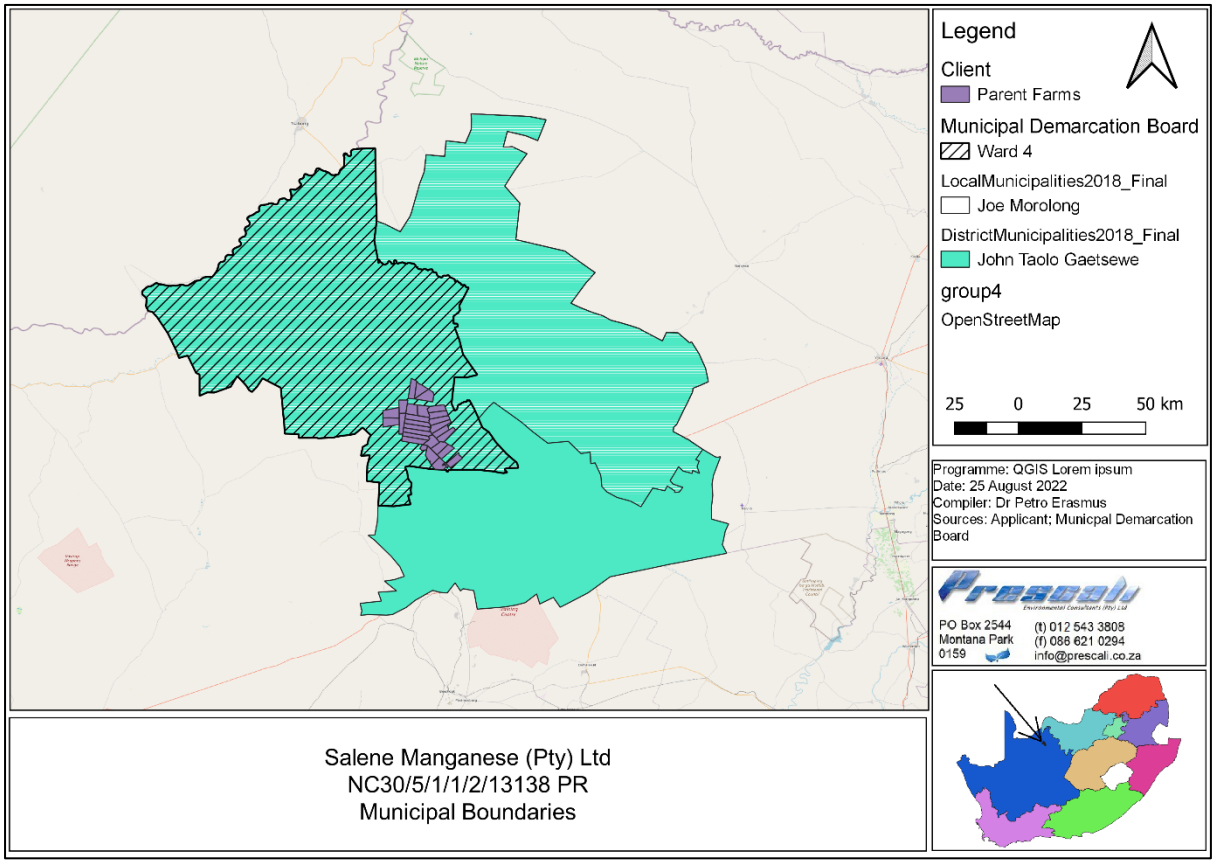

Figure 10-1: Location within District and Local Municipality Boundaries

10.2. Climate

10.2.1. Regional Climate

Simulated climate data for Hotazel were sourced from MeteoBlue[35] and can be described as semi-arid with rainfall predominantly falling in the summer and early autumn. Maximum temperatures may vary between 21°C and 35°C (Figure 10-2).

[35] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/hotazel_south-africa_995397, 25 August 2022

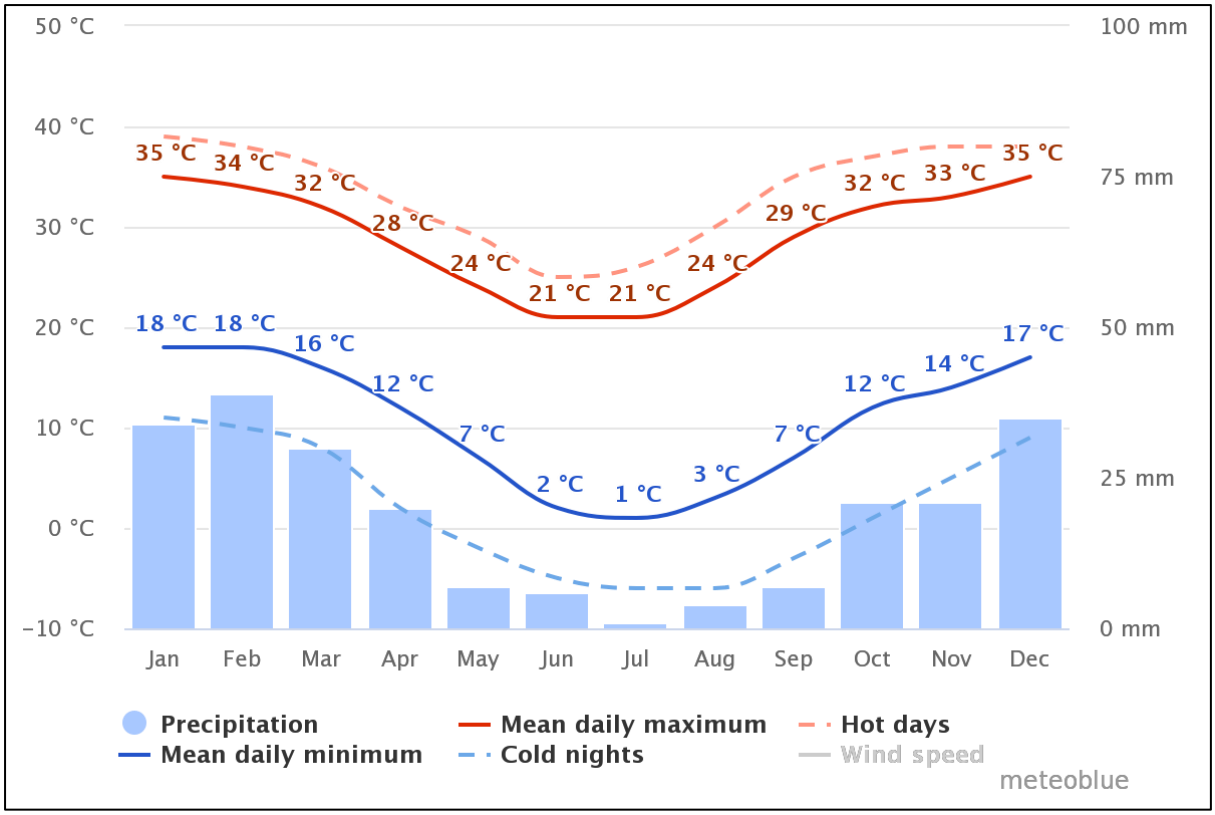

Figure 10-2: Simulated Hotazel Climate[35]

10.2.2. Rainfall

Rainfall records extending a period of 40 years (Thari Resources (Pty) ltd, 2012) for the Sishen Weather Station (Station No. 0356857AX) show that the mean annual precipitation (MAP) is 349 mm. The majority of rain falls in the late summer months of December, January, February and March, whilst the lowest rainfall records are recorded for the months of June, July and August (see also simulated climate for Hotazel, Figure 10-2). From the SIshin data, rainfall tends to vary widely over the years as typical of most arid and semi-arid climates. From the data available from WR2012 (Baily & Pitman, 2015)) it indicates that the proposed prospecting area is located in a rainfall area of 204 – 388 mm per year.

Table 10-1: Rainfall as recorded at Sishen (Thari Resources (Pty) ltd, 2012)

Rainfall	**Sishen**		
	Average	**Minimum**	**Maximum**
Total	**349**	**105**	**1086**
January	70	0	418
February	56	0	291
March	62	0	275
April	33	0	130
May	12	0	101
June	6	0	79
July	2	0	18
August	3	0	51
September	8	0	51
October	23	0	91
November	31	0	132
December	55	0	276

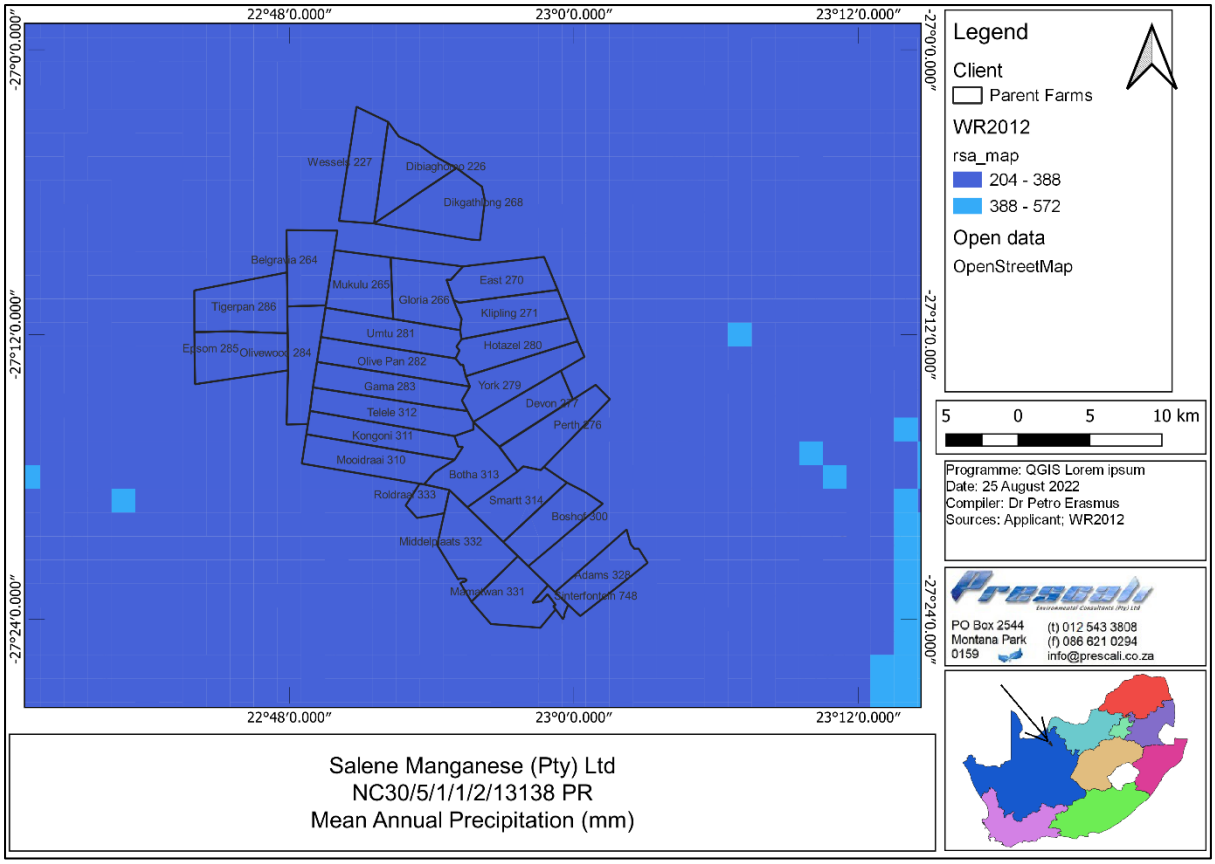

Figure 10-3: Mean Annual Rainfall Map (WR2012)

10.3. Evaporation

Figure 10-4 shows that the evaporation within the proposed prospecting area is greater than 2600 mm per annum which contributes to the arid conditions in the area.

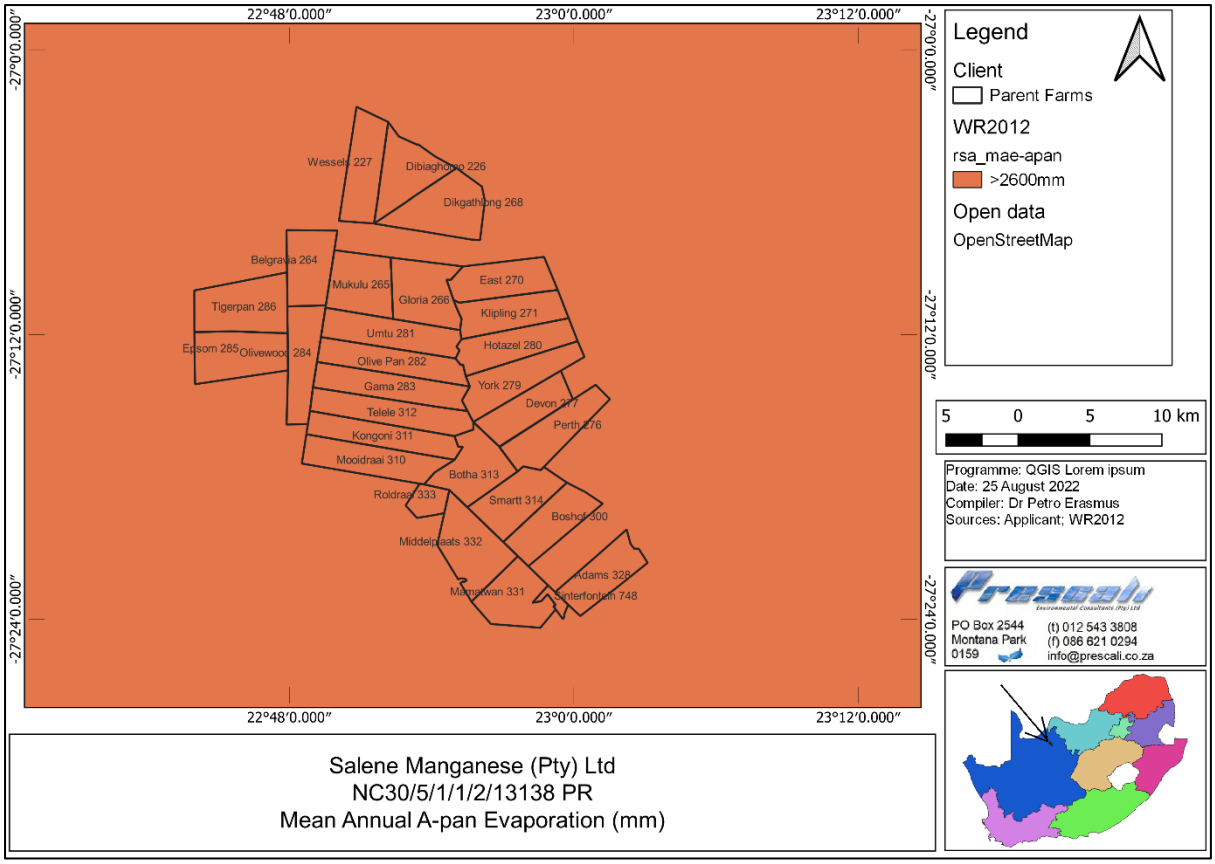

Figure 10-4: Mean Annual Evaporation Map (WR2012)

10.4. Topography

The topography of the general area is indicated in Figure 10-5 (Google Earth™) and Figure 10-6. From the contour lines it can be seen that there is a mountainous area (elevated) on the eastern side of the of the application area and on the western area there are what appears to be ridged running in a south westerly direction. It can be concluded that the prospecting area topography range from flat to undulating terrain. The topography for the 500 m radius for each of the 12 proposed surface sampling points is mainly residue deposits / stockpile areas and no longer in its natural condition.

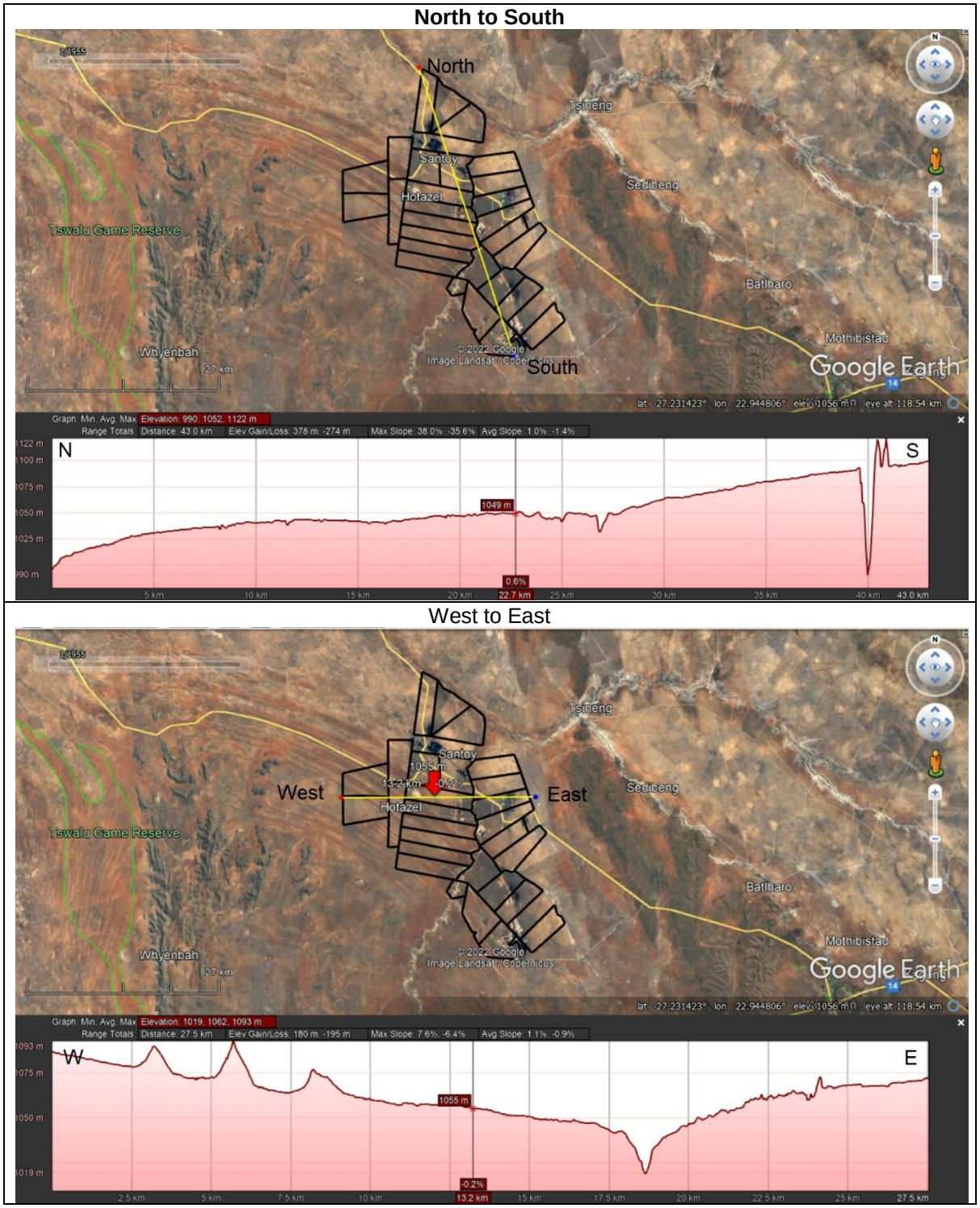

Figure 10-5 : Topography of the Prospecting Right Area (Google Earth™)

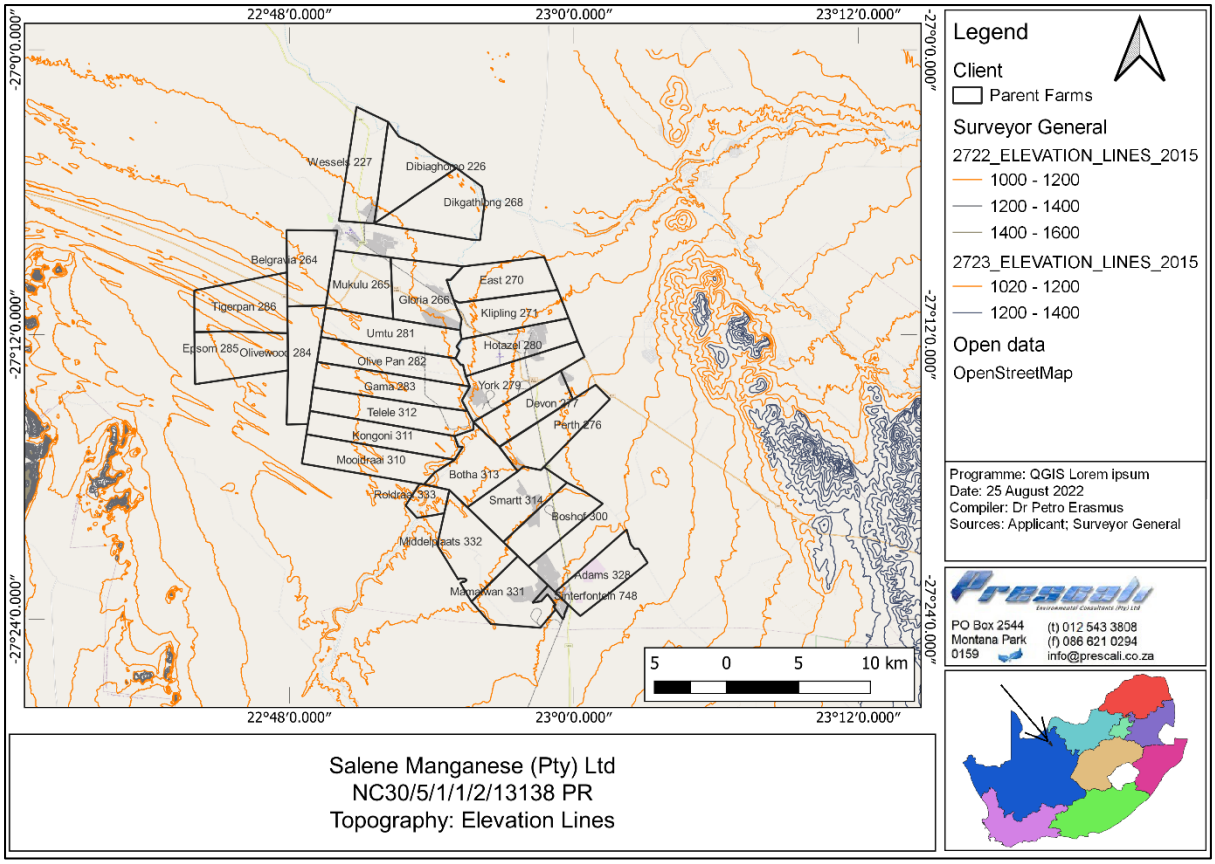

Figure 10-6: Elevation lines across the Prospecting Right Area

10.5. Geology

The regional geology is shown in Figure 10-7 as per the Mine Works Plan.

10.5.1. Regional Geology

The proposed prospecting area form part of the of the well-known Northern Cape, Kalahari Manganese field (KMF). The KMF lies northwest of Kuruman and consists of five structurally preserved erosional relics of the Hotazel Formation which comprises Superior-type iron formation with interbedded units of manganese ore. The Mamatwan-Wessels basin (or main Kalahari deposit) is the largest of the five deposits, comprising a basin with a strike length of 41 km and width varying between 5 and 20 km . The total area underlain by the basin is about 425 km^2 (Miyano and Beukes 1987 as cited in the Mine Works Plan (MWP)). Of the other four deposits, the Hotazel and Langdon Annex deposits, which lie east of the main deposit, have been virtually mined out. The Avontuur and Leinster deposits lying north of the main deposit are small and of subeconomic grade. Almost the entire manganese field is covered by the Kalahari Formation, the only outcrop being at Black Rock, where the Hotazel Formation forms a small koppie. In the southeastern portion of the basin, the Hotazel Formation is near surface and is directly overlain by the Kalahari Formation. The middle body is only 1-3 m thick and thus subeconomic. The average thickness of the upper body is 5 m and limited exploitation of this unit has taken place (Miyano and Beukes 1987 as referenced in the MWP). In the southern portion of the KMF, however, the upper body may reach 30 m in thickness and the middle body is often absent. The amount of the sequence preserved in any area is related to the severity of palaeoerosion.

The lower manganese body is characterised by a braunite-kutnahorite mineral assemblage and is considered to represent a primary to early diagenetic sediment. This is referred to as Mamatwan-type ore and represents approximately 97% of the total manganese resource of the Kalahari deposit (Miyano and Beukes 1987 as cited in the MWP). Along the northwestern margin of the area, intense faulting, thrusting and associated hydrothermal activity have removed carbonates and silica, thereby upgrading the ore to a coarse-grained braunite 11- hausmannite-bixbyite assemblage, known as Wessels- type ore (Miyano and Beukes 1987; Gutzmer and Beukes 1995 as cited in the MWP). The transition from Mamatwan- to Wessels-type ore is not well constrained. Local thrusting has duplicated the ore horizon

in places, as is the case at Wessels and Black Rock. The Hotazel and Langdon Annex deposits represent portions of the Hotazel Formation that have been downfaulted into graben structures. Here, hydro- thermal and supergene enrichment have produced an ore with a manganese content in excess of 60 %, often referred to as Hotazel supergrade ore (Miyano and Beukes 1987 as cited in the MWP). The Avontuur and Leinster deposits contain a low-grade jacobsitic type of ore.

The prospecting area have been investigated in detail by many companies in the past, but mainly for manganese and iron only. Salene Manganese will focus on the potential occurrence of other minerals in the area which is still largely unknown. Recently obtained information and references in old literature, corroborated by anecdotal evidence do, however suggest the presence of other types of mineralization (which have a comparable history of origin and deposition to the manganese mineralization) in the area as well. During routine multi-element analysis of exploration samples (on the farm Macarthy 559), elevated concentrations of certain elements were detected. Such levels of concentration are considered to warrant further investigation (exploration) on these, and associated elements as listed in the application

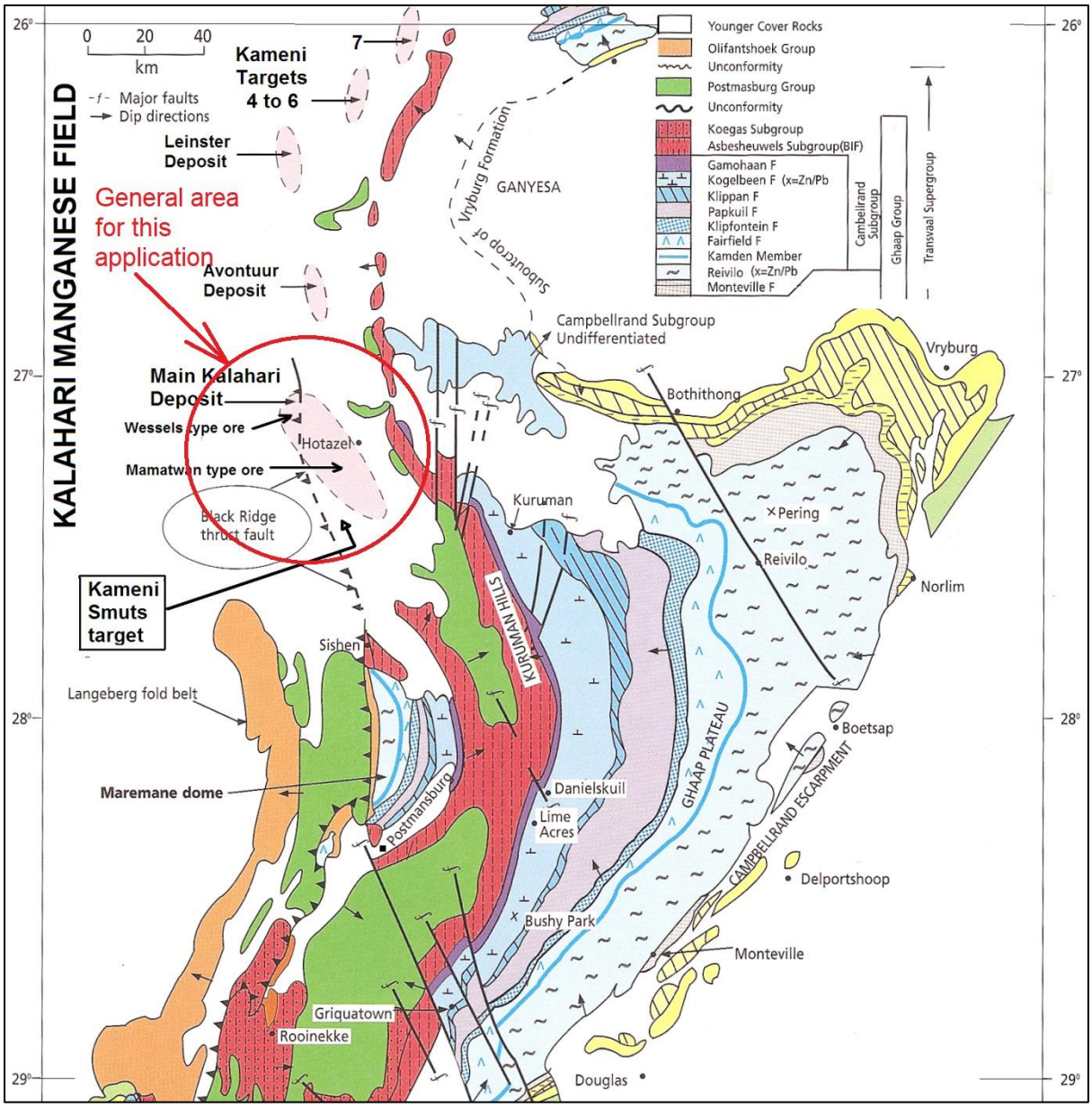

Figure 10-7: Simplified geology map of the Postmasburg and Kalahari manganese fields (Figure adapted from Cairncross et al, 1997 as cited in the Mine Works Plan)

10.5.2. Site Specific Geology

Site specific information as applicable to some of the farms included in the prospecting area was sourced from available reports and it is believed that this geology may be applicable to most of the prospecting area. Should a second phase of prospecting be identified site specific geology information will become available during such exploration.

Gloria 266 Kipling 271 and Umtu 281 (Nariansamy, M. & Smyth, N., 2021): The Hotazel Formation on these farms is overlain by Early Permian Dwyka diamictite (tillite) of the Karoo Supergroup or Cenozoic Kalahari calcrete, clay and windblown sand. From the information available, the general stratigraphy on these farms consists of the following:

- Kalahari Formation (or "beds"), consisting of sand, clay and limestone;
- Dwyka Formation, consisting of tillite);
- Mooidraai Formation, consisting of dolomite;
- Hotazel Formation which consists of Banded Iron Formation (BIF). The ore is contained within a mineralised zone which is made up of three manganese rich zones; the Upper Manganese Ore Body (UMO), the Middle Manganese Ore Body (MMO) and the Lower Manganese Ore Body (LMO); and
- Ongeluk Formation, consisting of basaltic lava.

10.6. Soil and Land Capability

On a regional scape (all properties forming part of this application) the following soil series were identified (Figure 10-8):

- 3 Clovelly (Cv30/Cv33) - 45 Hutton (Hu30/Hu33) - 40 Fernwood (Fw20); and
- 3 Hu31/Hu34 - 60 Hu36 - 20 Mispah (Ms10).

Available information on Gloria 266 Kipling 271 and Umtu 281 (Nariansamy, M. & Smyth, N., 2021) indicate the presence of the following soil types Clovelly, Molopo, Witbank, Brandvlei and Kinkelbos. The soils are very sandy (90% sand fraction), while in the Ga-Mogara drainage channel the clayey-sand texture consisting of 18 to 24% clay particles and 72 to 80% sand particles.

It is highly likely that Anthrosols (heavily modified soil types) will also be present within the prospecting right area.

Due to the sandy nature of the soils in the area it has limited agricultural potential (Nariansamy, M. & Smyth, N., 2021).

Given the limited rainfall, lack of irrigation and high temperatures in the area, none of these soils are likely to contribute to sustainable national food production. The soils are therefore not considered sufficient for viable cultivated commercial farming and only considered marginal suitable for small scale commercial livestock farming.

Table 10-2: Land Capability Classes for soil forms within the proposed prospecting area

Land Capability	Soil Forms
Arable Class II	Hutton (Hu)
Arable Class II	Clovelly (Cv)
Grazing- Class V	Mispah (Ms)
Class IV, V or VI – Low suitability	Fernwood (Fw)
Wildlife/Wilderness – Class VIII	Anthrosols
Non-Arable	Built up areas e.g., residential, mining, commercial, access roads

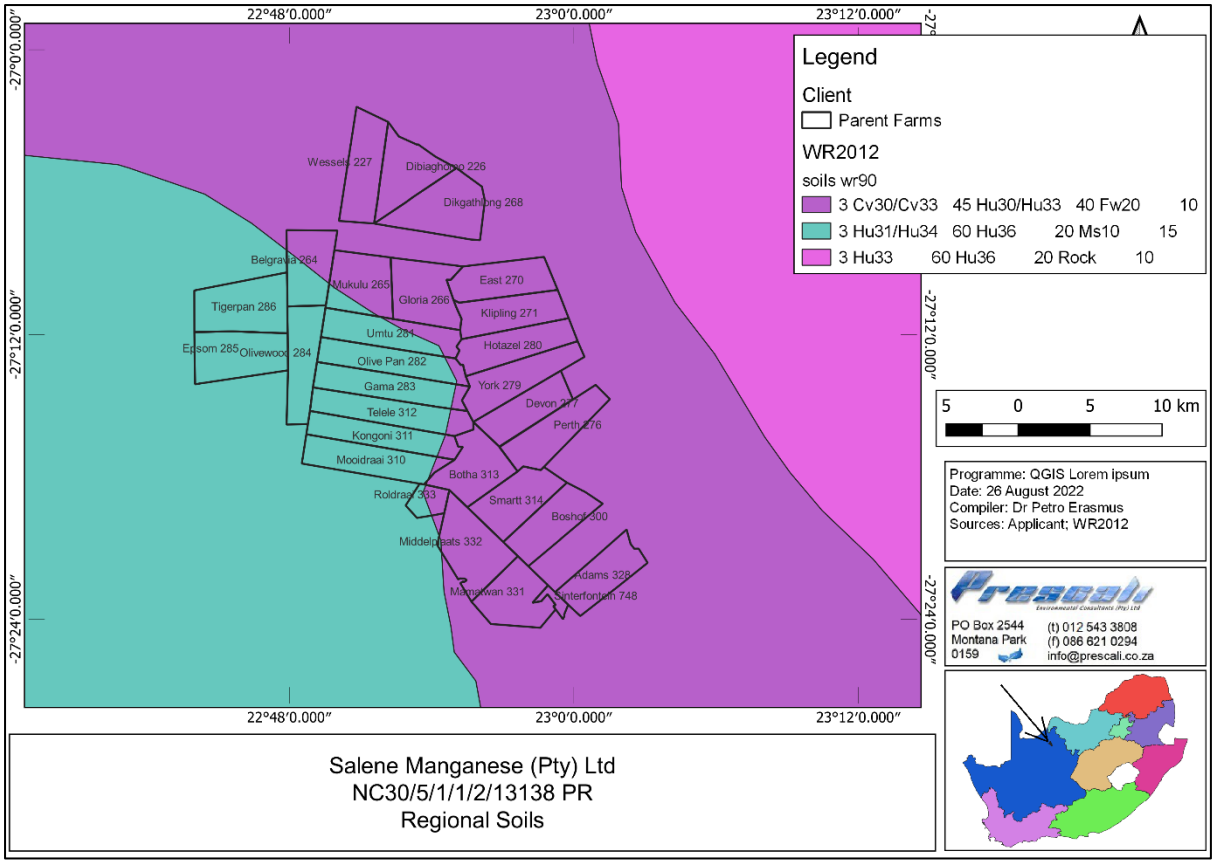

Figure 10-8: Generalised Soil Map

10.7. Terrestrial Biodiversity

The desktop assessment indicated that the proposed prospecting area falls within the following classification areas in term of biodiversity as per the Northern Cape assessment done in 2016 (Figure 10-9):

- Critical Biodiversity area 1: northern part of the application area;
- Ecological support area: mostly associated with drainage lines and outcrops as noted in the topography section (Part A: Section 10.4);
- Other Natural areas: most of the application area; and
- Unclassified areas that are located at active mining areas.

Sampling site assessment in terms of the CBA areas indicated the CBA classifications (Figure 10-10, Figure 10-11, Table 10-3).

Table 10-3: CBA classification comparison with Google Maps™ verification

Sampling site: 500 m radius	CBA Classification	Google Maps™ verification
1	N/A and Other natural	Residue deposit & Other natural
2	N/A	Residue deposit & Other natural
3	N/A and Other natural	Residue deposit & Other natural
4	N/A	Residue deposit & Mining
5	Other natural	Residue deposit & Other natural
6	N/A and Other natural	Residue deposit & Other natural
7	N/A	Residue deposit & Other natural
8	N/A and Other natural	Residue deposit & Other natural
9	N/A and Other natural	Residue deposit & Other natural
10	N/A, ESA1 and Other natural	Residue deposit & Other natural
11	N/A, ESA1 and Other natural	Residue deposit & Other natural
12	N/A and Other natural	Residue deposit & Other natural

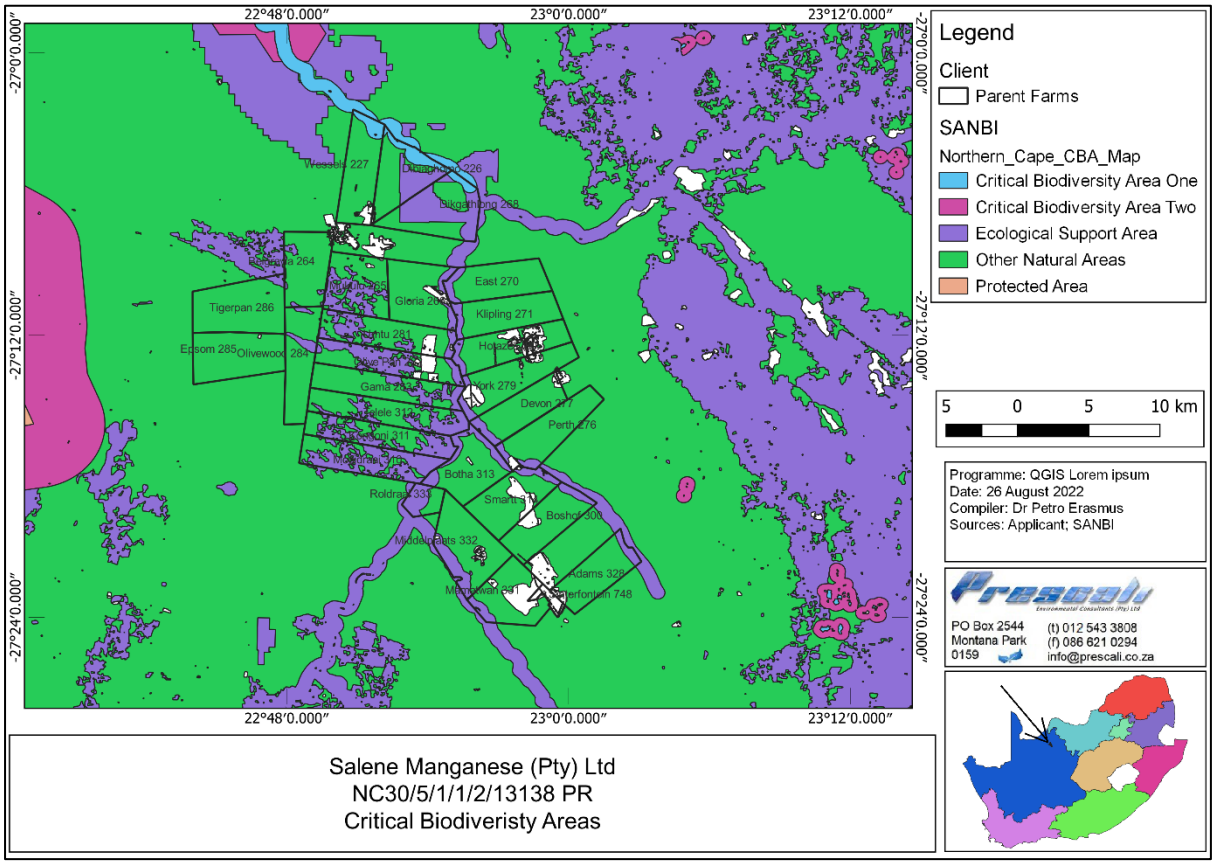

Figure 10-9: Critical Biodiversity Area (CBA) Map – whole prospecting area

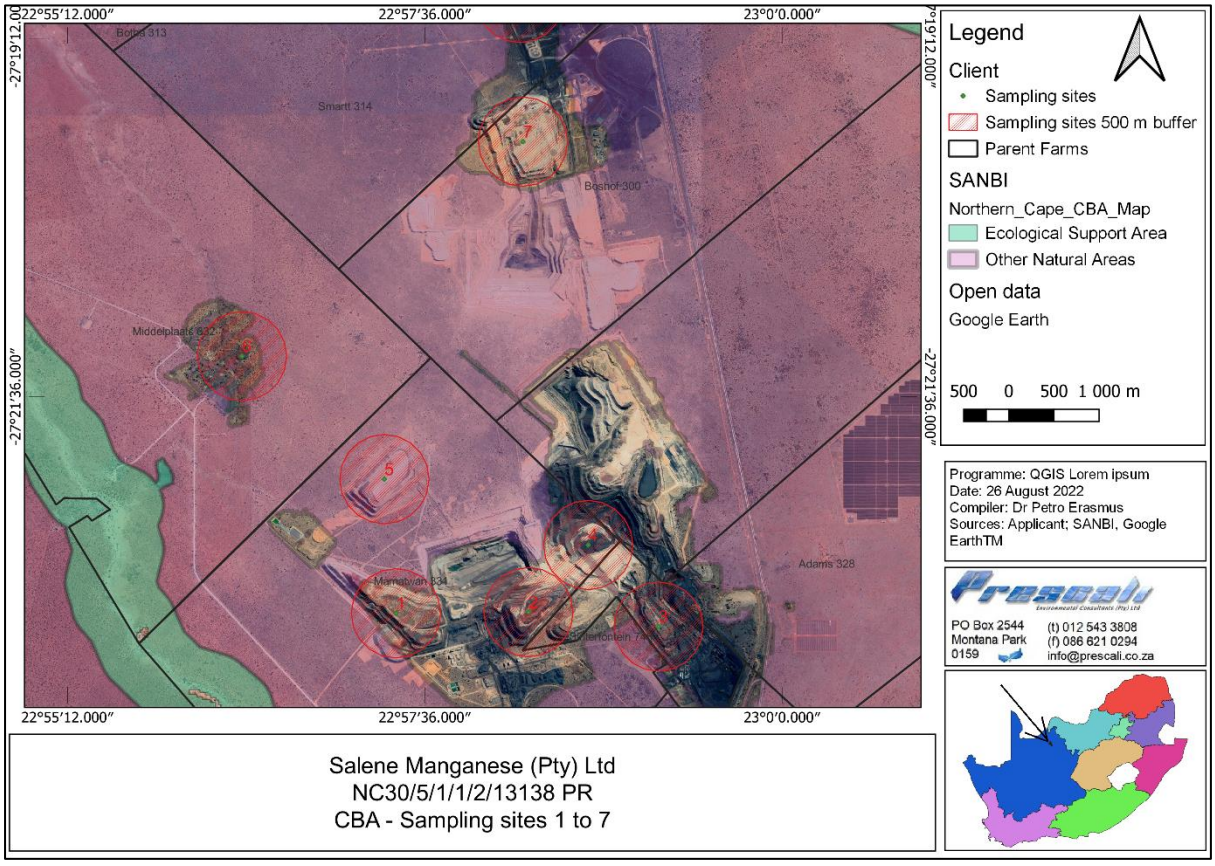

Figure 10-10: CBA at proposed sampling sites and 500 m radius boundary – Sites 1 to 7

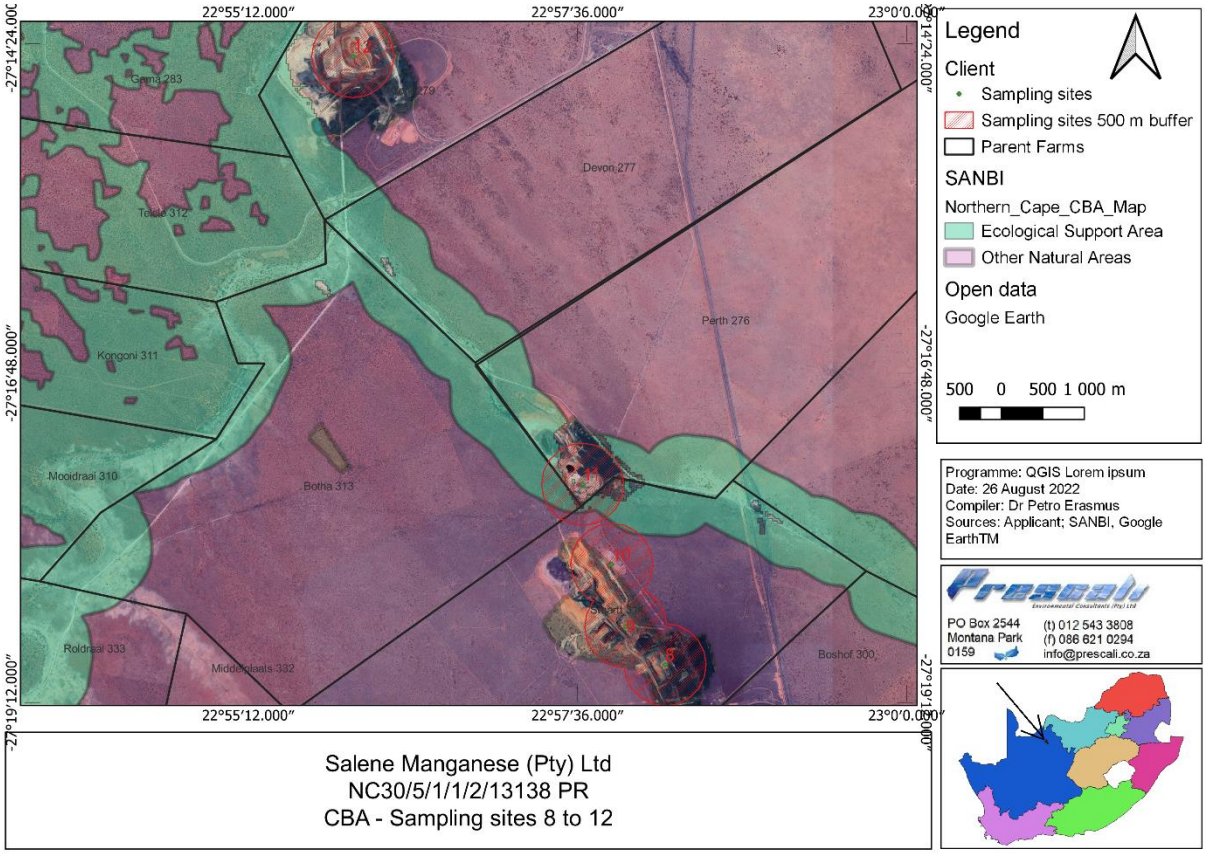

Figure 10-11: CBA at proposed sampling sites and 500 m radius boundary – Sites 8 to 12

From the latest information available from EGIS[36] the prospecting application area does not intersect with a declared protected or conservation area (Figure 10-12).

The Critical Biodiversity Areas (CBA) and Protected areas are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole.

[36] https://egis.environment.gov.za/data_egis/data_download/current 26/08/2022

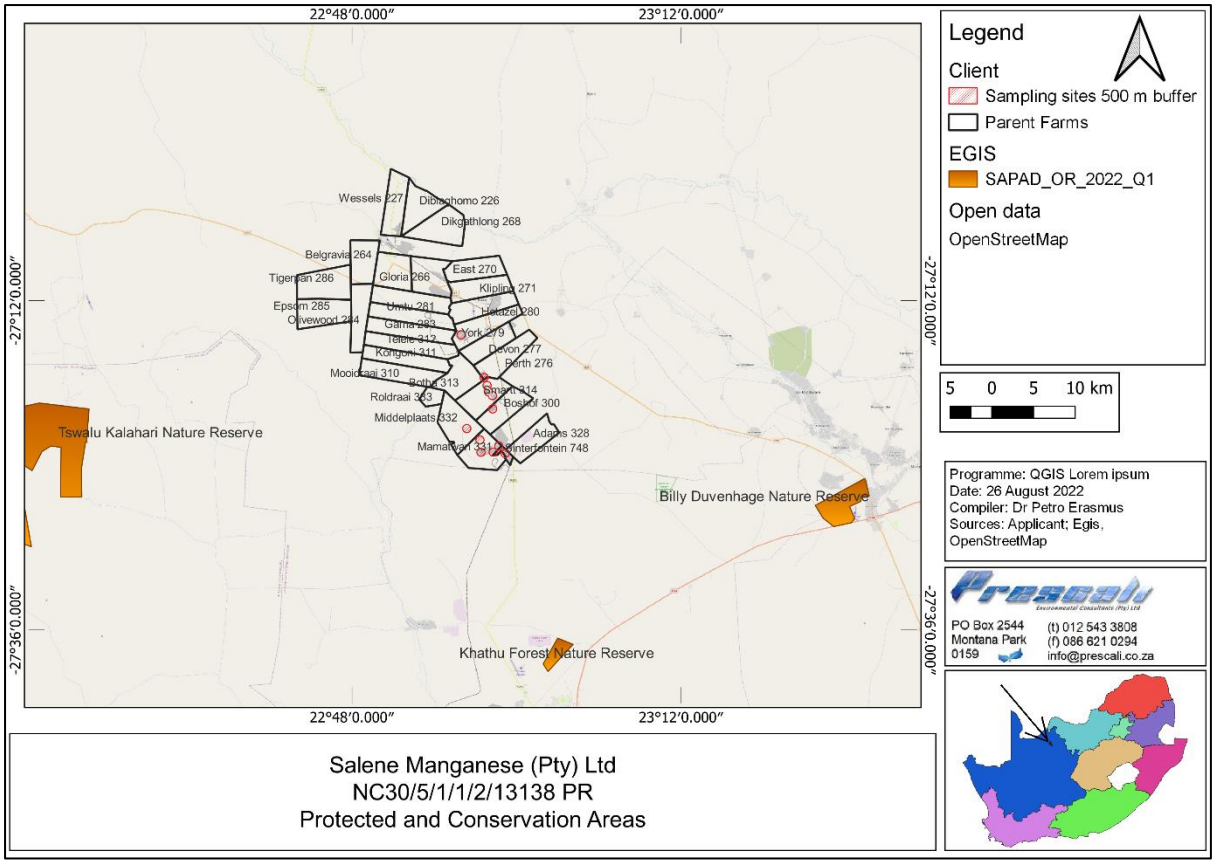

Figure 10-12: Protected and Conservational areas

10.7.1. Flora

Based on the classification (Mucina & Rutherford, 2006) the prospecting area is located within the Savannah Biome and from the National Vegetation Map (2018) (Figure 10-13) the applicable units are:

- Gordonia Duneveld;
- Kathu Bushveld; and
- Southern Kalahari Mekgacha.

As the prospecting activities will be located within disturbed areas (Residue deposits / stockpiles and mining) no vegetation is expected to be present at the locations where samples will be collected.

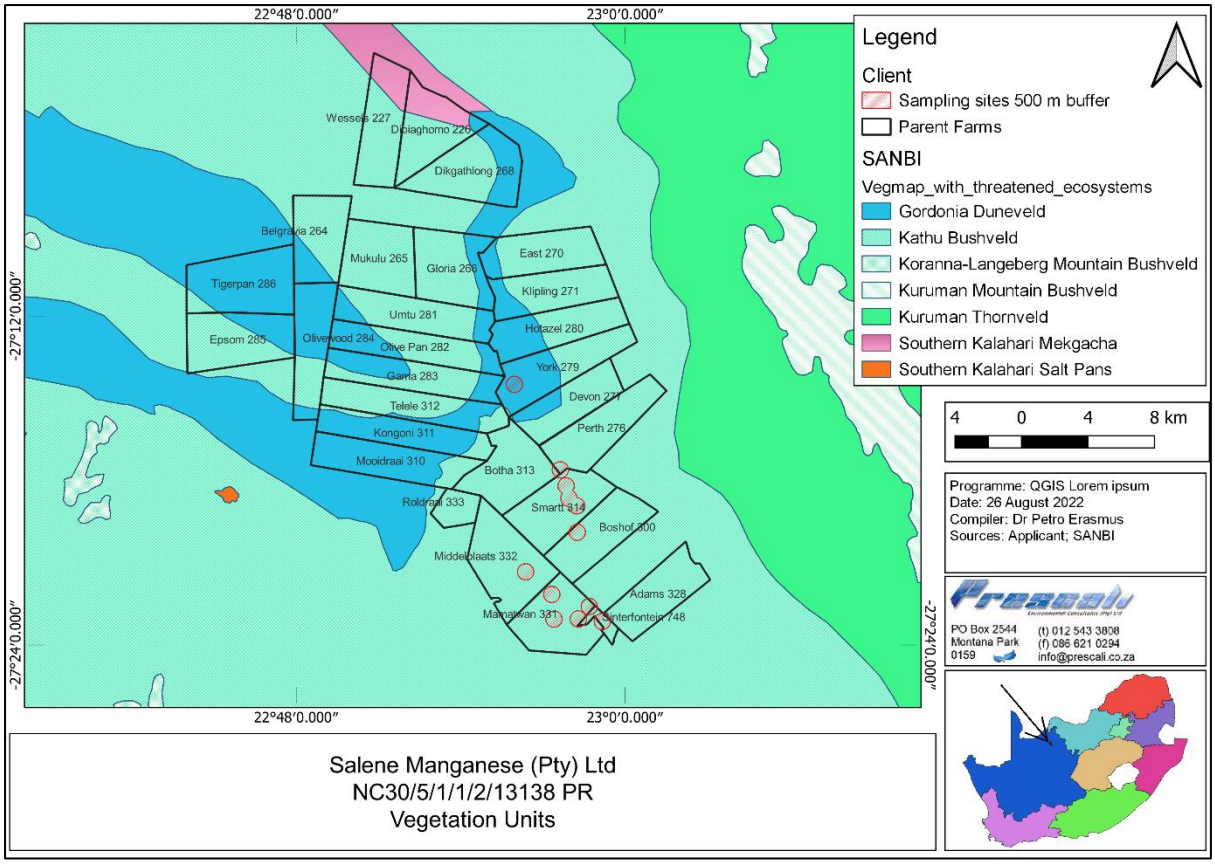

Figure 10-13: National Vegetation Map

A search on the SANBI POSA [37] website for the area as indicated in Figure 10-14, indicated that the plant species as indicated in Appendix 5 could occur within the prospecting right application- and suuroung area. From the list in Appendix 5 the Near Endangered species (IUSC) were extracted and are indicated in Table 10-4.

Table 10-4: Near Endangered Plant Species occurring within / near the prospecting application area

Family	Species	Diagnostic	Ecology
Amaranthaceae	*Hermbstaedtia odorata*	herb;	Indigenous
Asparagaceae	*Asparagus exuvialis*	shrub;	Indigenous
Cyperaceae	*Cyperus longus*	cyperoid; helophyte; herb;	Indigenous
Fabaceae	*Prosopis velutina*	shrub; tree;	Not indigenous; Naturalised; Invasive
Fabaceae	*Indigofera daleoides*	herb;	Indigenous
Fabaceae	*Tephrosia purpurea*	herb;	Indigenous
Fabaceae	*Prosopis glandulosa*	shrub; tree;	Not indigenous; Naturalised
Fabaceae	*Rhynchosia confusa*	climber; herb;	Indigenous
Limeaceae	*Limeum viscosum*	herb;	Indigenous
Limeaceae	*Limeum aethiopicum*		Indigenous; Endemic
Pedaliaceae	*Harpagophytum procumbens*	herb;	Indigenous
Poaceae	*Eragrostis mexicana*	graminoid;	Not indigenous; Naturalised
Poaceae	*Digitaria sanguinalis*	graminoid;	Not indigenous; Naturalised
Poaceae	*Lamarckia aurea*	graminoid;	Not indigenous; Naturalised; Invasive
Poaceae	*Eragrostis barrelieri*	graminoid;	Not indigenous; Naturalised

[37] http://posa.sanbi.org/sanbi/Explore 29 August 2022

Family	Species	Diagnostic	Ecology
Poaceae	*Cymbopogon pospischilii*	graminoid;	Indigenous
Vahliaceae	*Vahlia capensis*	herb;	Indigenous

As the prospecting activities will be located within disturbed areas (Residue deposits / stockpiles and mining) limited vegetation is expected to be present at the locations where samples will be collected.

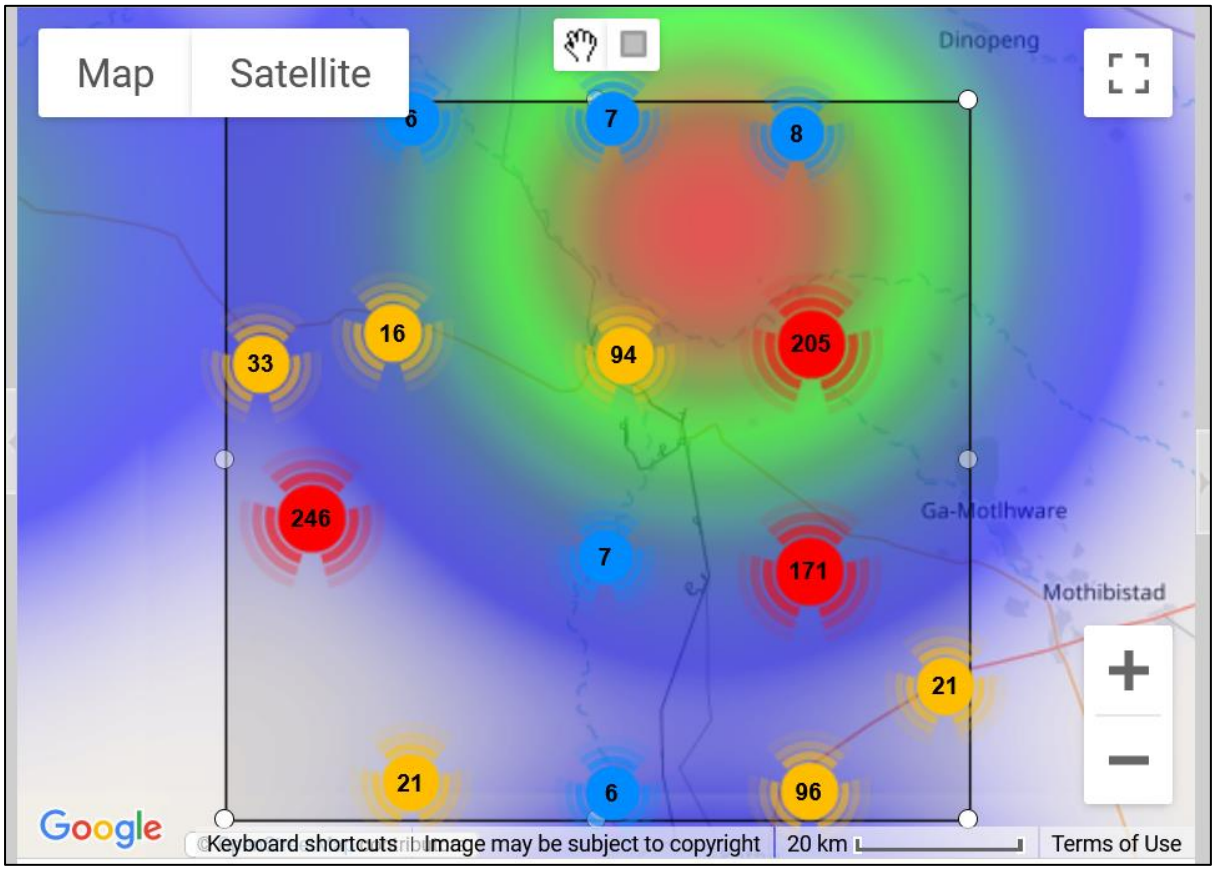

Figure 10-14: SANBI POSA search area.

10.7.2. Fauna

A desktop assessment (30 August 2022) on the Virtual Museum database indicated that the following animals may occur within the quaternary degree squares: 2722BB; 2722BD; 2723AA and 2723AC.

Table 10-5: List of animal species that could occur on site

	Family	Scientific name	Common name	Red list category
Spiders	Theraphosidae	*Harpactirella sp.*		
Spiders	Theraphosidae	*Idiothele nigrofulva*		
Spiders	Theraphosidae	*Harpactira baviana*		
Lepidoptera	Hesperiidae	*Leucochitonea levubu*	White-cloaked skipper	Least Concern (SABCA 2013)
Lepidoptera	Hesperiidae	*Pelopidas mathias*	Black-branded swift	Least Concern (SABCA 2013)
Lepidoptera	Hesperiidae	*Spialia ferax*	Striped sandman	Least Concern (SABCA 2013)
Lepidoptera	Hesperiidae	*Spialia mafa mafa*	Mafa sandman	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Aloeides damarensis damarensis*	Damara russet	Least Concern (SABCA 2013)

	Family	Scientific name	Common name	Red list category
Lepidoptera	Lycaenidae	*Aloeides gowani*	Karoo russet	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Aloeides simplex*	Dune russet	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Azanus jesous*	Topaz babul blue	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Cigaritis natalensis*	Natal silverline	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Cigaritis phanes*	Silvery silverline	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Crudaria leroma*	Silver-spotted grey	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Leptotes pirithous pirithous*	Common zebra blue	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Tarucus sybaris linearis*	Dotted pierrot	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Acraea neobule neobule*	Wandering donkey acraea	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Danaus chrysippus orientis*	African plain tiger	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Vanessa cardui*	Painted lady	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Belenois aurota*	Pioneer caper white	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Catopsilia florella*	African migrant	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Eurema brigitta brigitta*	Broad-bordered grass yellow	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Teracolus agoye bowkeri*	Speckled sulphur tip	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Teracolus eris eris*	Banded gold tip	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Teracolus subfasciatus*	Lemon traveller	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Belenois aurota*	Pioneer caper white	Least Concern (SABCA 2013)
Lepidoptera	Hesperiidae	*Spialia delagoae*	Delagoa sandman	Least Concern (SABCA 2013)
Lepidoptera	Hesperiidae	*Spialia ferax*	Striped sandman	Least Concern (SABCA 2013)
Lepidoptera	Hesperiidae	*Spialia mafa mafa*	Mafa sandman	Least Concern (SABCA 2013)
Lepidoptera	Hesperiidae	*Spialia spio*	Mountain sandman	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Aloeides damarensis damarensis*	Damara russet	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Aloeides molomo krooni*	Mottled russet	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Aloeides simplex*	Dune russet	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Argyraspodes argyraspis*	Warrior silver-spotted copper	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Cigaritis natalensis*	Natal silverline	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Cigaritis phanes*	Silvery silverline	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Cupidopsis jobates jobates*	Tailed meadow blue	Least Concern (SABCA 2013)

	Family	Scientific name	Common name	Red list category
Lepidoptera	Lycaenidae	*Stugeta subinfuscata reynoldsi*	Dusky marbled sapphire	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Tarucus sybaris linearis*	Dotted pierrot	Least Concern (SABCA 2013)
Lepidoptera	Lycaenidae	*Tylopaedia sardonyx sardonyx*	King copper	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Acraea neobule neobule*	Wandering donkey acraea	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Danaus chrysippus orientis*	African plain tiger	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Hypolimnas misippus*	Common diadem	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Junonia oenone oenone*	Dark blue pansy	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Vanessa cardui*	Painted lady	Least Concern (SABCA 2013)
Lepidoptera	Nymphalidae	*Ypthima asterope hereroica*	African three-ring	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Belenois aurota*	Pioneer caper white	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Catopsilia florella*	African migrant	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Pontia helice helice*	Southern meadow white	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Teracolus agoye bowkeri*	Speckled sulphur tip	Least Concern (SABCA 2013)
Lepidoptera	Pieridae	*Teracolus subfasciatus*	Lemon traveller	Least Concern (SABCA 2013)
Mammals	Manidae	*Smutsia temminckii*	Ground Pangolin	Vulnerable (2016)
Mammals	Mustelidae	*Mellivora capensis*	Honey Badger	Least Concern (2016)
Mammals	Leporidae	*Lepus capensis*	Cape Hare	Least Concern
Mammals	Muridae	*Gerbilliscus leucogaster*	Bushveld Gerbil	Least Concern (2016)
Mammals	Muridae	*Thallomys nigricauda*	Black-tailed Thallomys	Least Concern (2016)
Mammals	Bathyergidae	*Cryptomys hottentotus*	Southern African Mole-rat	Least Concern (2016)
Mammals	Erinaceidae	*Atelerix frontalis*	Southern African Hedgehog	Near Threatened (2016)
Mammals	Felidae	*Felis nigripes*	Black-footed Cat	Vulnerable (2016)
Mammals	Felidae	*Felis silvestris*	Wildcat	Least Concern (2016)
Mammals	Herpestidae	*Herpestes sanguineus*	Slender Mongoose	Least Concern (2016)
Mammals	Leporidae	*Lepus capensis*	Cape Hare	Least Concern
Mammals	Muridae	*Mastomys natalensis*	Natal Mastomys	Least Concern (2016)
Mammals	Muridae	*Mus (Nannomys) minutoides*	Southern African Pygmy Mouse	Least Concern
Mammals	Nesomyidae	*Dendromus melanotis*	Gray African Climbing Mouse	Least Concern (2016)
Mammals	Nycteridae	*Nycteris thebaica*	Egyptian Slit-faced Bat	Least Concern (2016)
Mammals	Pedetidae	*Pedetes capensis*	South African Spring Hare	Least Concern (2016)

	Family	Scientific name	Common name	Red list category
Mammals	Bathyergidae	*Fukomys damarensis*	Damara Mole-rat	Least Concern (2016)
Mammals	Molossidae	*Tadarida aegyptiaca*	Egyptian Free-tailed Bat	Least Concern (2016)
Mammals	Muridae	*Gerbilliscus brantsii*	Highveld Gerbil	Least Concern (2016)
Mammals	Muridae	*Gerbilliscus leucogaster*	Bushveld Gerbil	Least Concern (2016)
Mammals	Muridae	*Gerbilliscus paeba*	Paeba Hairy-footed Gerbil	Least Concern (2016)
Mammals	Muridae	*Thallomys nigricauda*	Black-tailed Thallomys	Least Concern (2016)
Mammals	Pedetidae	*Pedetes capensis*	South African Spring Hare	Least Concern (2016)
Mammals	Vespertilionidae	*Miniopterus natalensis*	Natal Long-fingered Bat	Least Concern (2016)
Mammals	Vespertilionidae	*Miniopterus schreibersii*	Schreibers's Long-fingered Bat	Near Threatened
Mammals	Vespertilionidae	*Neoromicia capensis*	Cape Serotine	Least Concern (2016)
Reptiles	Agamidae	*Agama aculeata aculeata*	Common Ground Agama	Least Concern (SARCA 2014)
Reptiles	Gekkonidae	*Chondrodactylus bibronii*	Bibron's Gecko	Least Concern (SARCA 2014)
Reptiles	Lacertidae	*Heliobolus lugubris*	Bushveld Lizard	Least Concern (SARCA 2014)
Reptiles	Lacertidae	*Pedioplanis lineoocellata lineoocellata*	Spotted Sand Lizard	Least Concern (SARCA 2014)
Reptiles	Lacertidae	*Pedioplanis namaquensis*	Namaqua Sand Lizard	Least Concern (SARCA 2014)
Reptiles	Pelomedusidae	*Pelomedusa galeata*	South African Marsh Terrapin	Not evaluated
Reptiles	Scincidae	*Trachylepis punctatissima*	Speckled Rock Skink	Least Concern (SARCA 2014)
Reptiles	Gekkonidae	*Pachydactylus capensis*	Cape Gecko	Least Concern (SARCA 2014)
Reptiles	Agamidae	*Agama aculeata aculeata*	Common Ground Agama	Least Concern (SARCA 2014)
Reptiles	Varanidae	*Varanus albigularis albigularis*	Rock Monitor	Least Concern (SARCA 2014)

Bird species that have been recorded on POSA (Desktop search 29 August 2022) are indicated in Appendix 6.

For the following no data has been reported on the Virual Museum database, however it is highly likely that species will be present:

- Frogs;
- Odonata; and
- Scorpion.

10.8. Surface Water

10.8.1. Affected River basin

The prospecting area is located within the Lower Vaal Water Management Area (WMA), specifically the Molopo Sub-WMA (DWAF, 2004). This WMA border on Botswana in the north and is semi-arid to arid (Section 10.2) resulting in endorheic rivers that typically cease to flow after some distance due to infiltration into the river bed and evaporation.

Minerals mined in this area are iron, manganese and diamonds, while farming ranges from extensive livestock production and rainfed cultivation and intensive irrigation enterprises (DWAF, 2004).

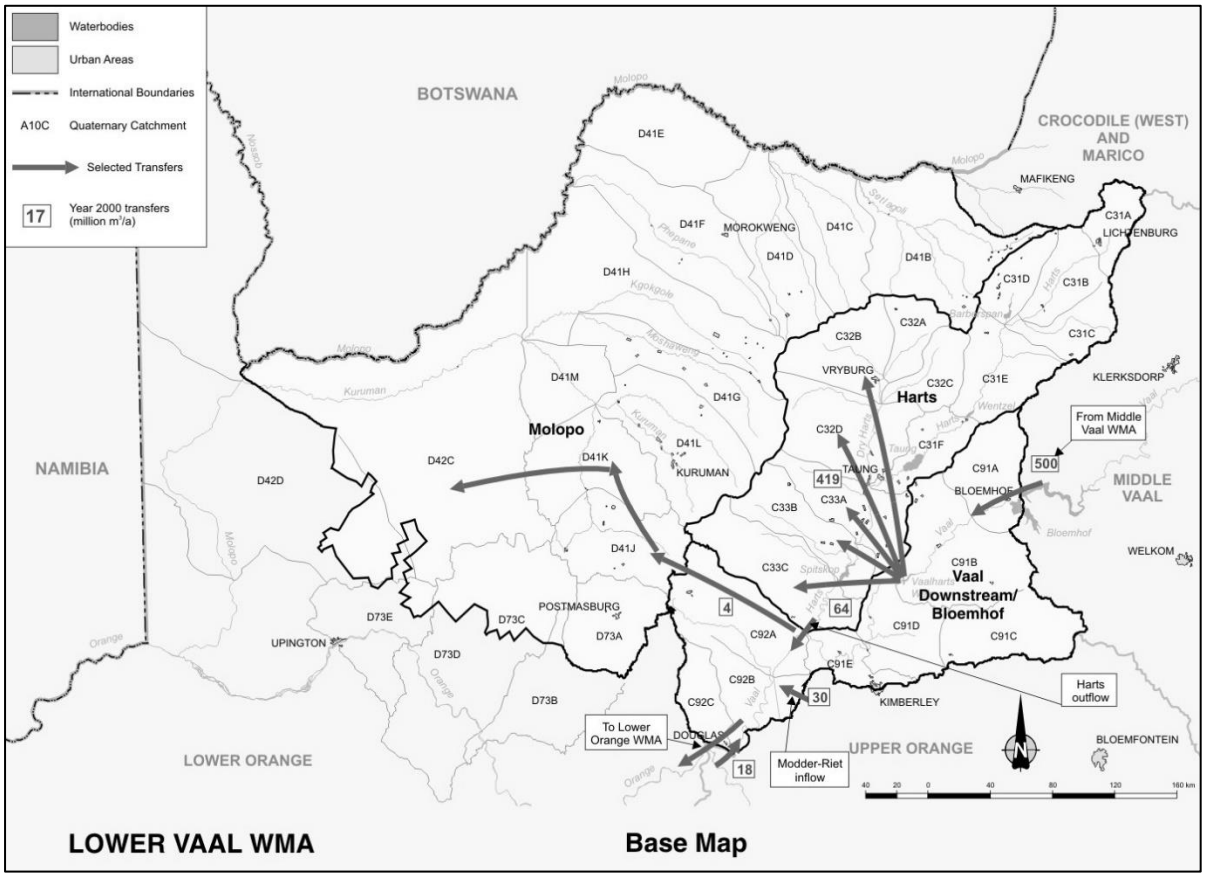

Figure 10-15: Lower Vaal Water Management Area (DWAF, 2004)

10.8.2. Quaternary catchment

The project area is located within quaternary catchment D41K, D41L and D41M. D41K is traversed by the Ga-Mogara River until it confluence with the Kuruman River, D41L and D41M is traversed by the Kuruman River, which eventually drains southwards along the Molopo River and joins the Orange River at Augrabies Falls.

Table 10-6: Quaternary catchment information (WR212)

Catchment	Area (km²)	MAE (mm)	MAP (mm)	MAR (mcm)
D41	Gross: 53 367 Net: 31 717	2234	355	59,24
D41K	Gross: 4 216 Net: 2 664	2351	344	6,53
D41L	Gross: 5 383 Net: 2 437	2250	391	10,78
D41M	Gross: 2 628 Net: 2 157	2399	305	2,05
D41K Prospecting area	467, 4982			0,724
D41L Prospecting area	5,4941			0,011
D41M Prospecting area	84,5012			0,066
Total Prospecting area	557,4935			0,801

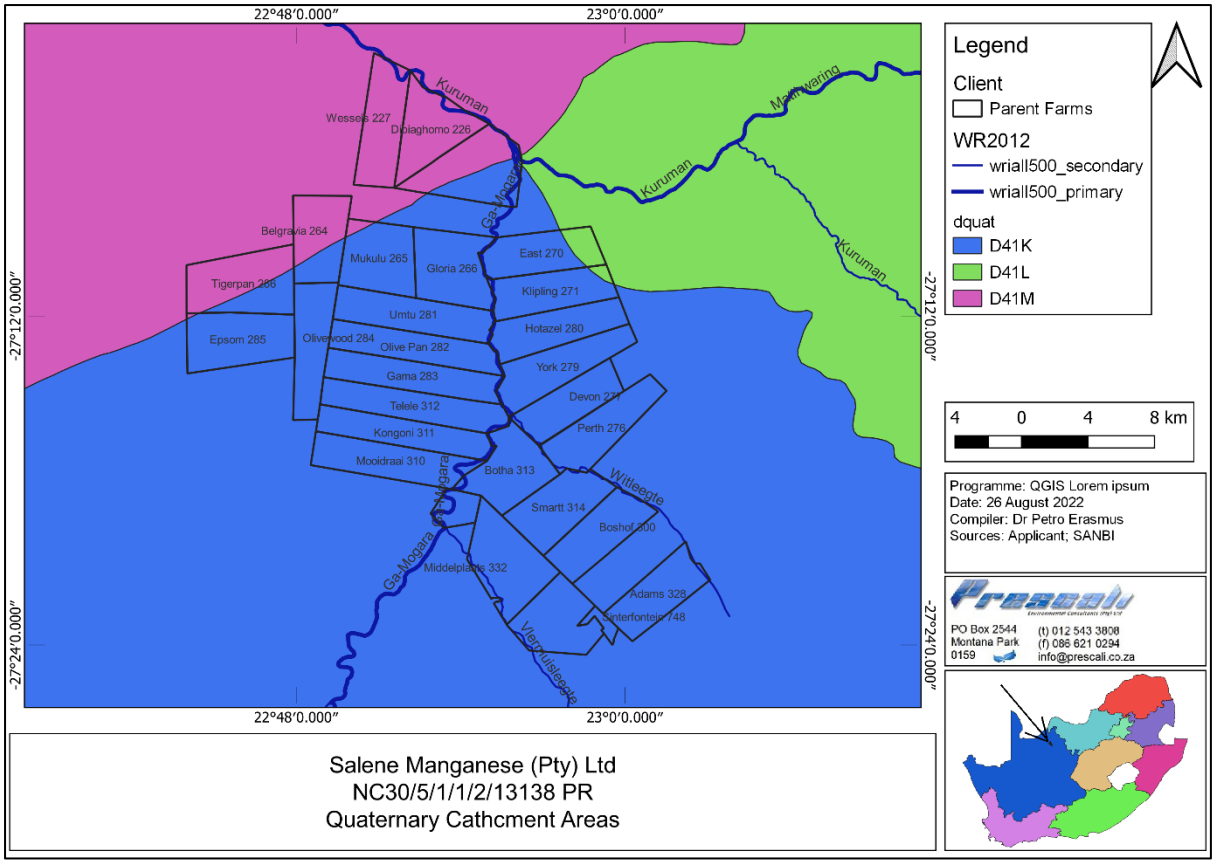

Figure 10-16: Quaternary Drainage area and watercourses

10.8.3. Site specific water resources

The Ga-Mogara River flows through the biggest part of the prospecting application area and two of its tributaries Witleegte and Vlermuisleegte intersects the prospecting application area as well (Figure 10-16). The Kuruman River form the most northern boundary of the prospecting application area.

Figure 10-17 shows the 12 sites 500 m radius sampling area relative to the surface water and it shows that with the exception of sampling sites 11 and 12, the 500 m radius in which samples will be collected are located outside of the regulated areas for watercourses and wetlands (IN = Inland natural). From Table 10-3 it is confirmed that these two sites can be considered "Not natural" due to the existing mining activities taking place as confirmed using Google Earth™.

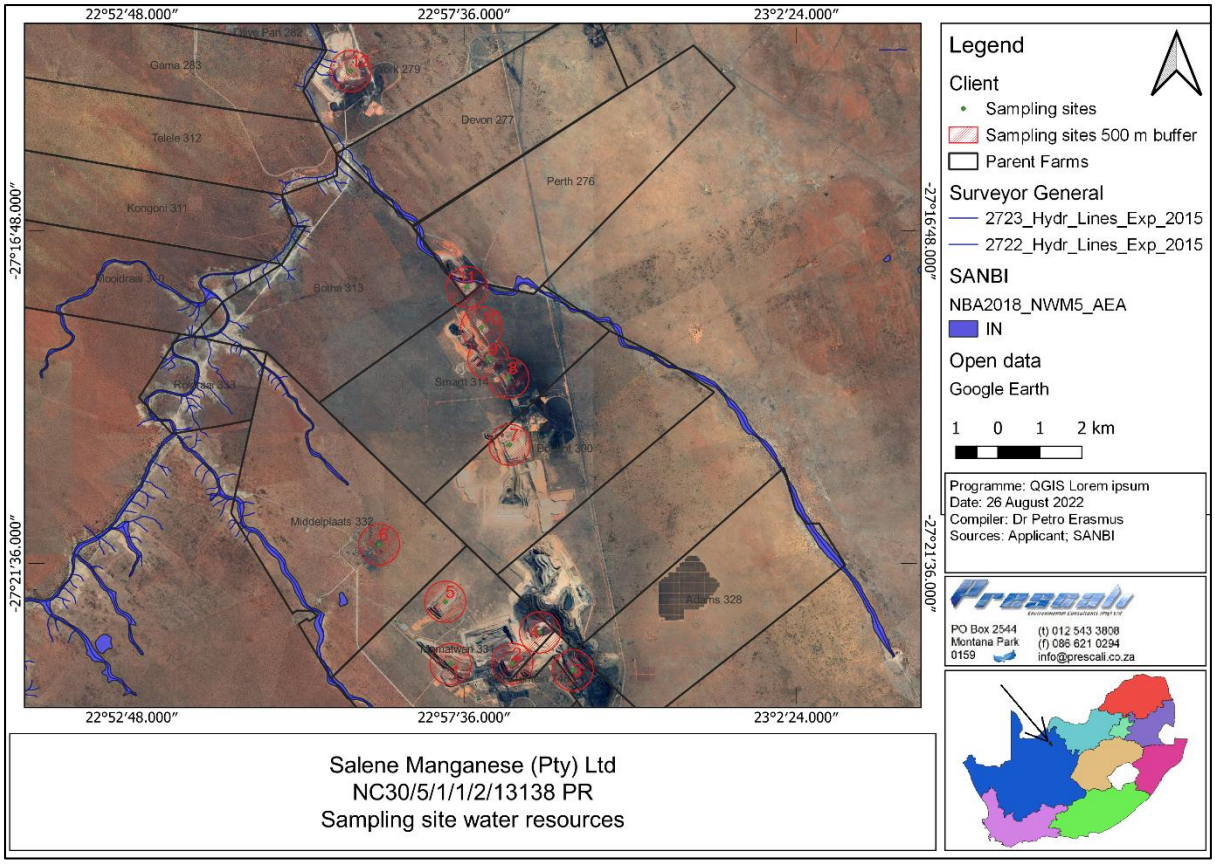

Figure 10-17: Sampling Areas location in relation to surface water resources

10.8.4. Wetland areas

Figure 10-18 shows other wetlands (Inland natural) within and around the prospecting application area. Most of the wetlands are associated with the rivers traversing the area though three depression wetland have been identified:

Number	Farm	Bioregion	Type	Wetland Condition Class
1	East 270	Eastern Kalahari Bushveld	Depression	A/B
2	Olivewood 284 and Olive pan 282	Kalahari Duneveld	Depression	D/E/F
3	Middelplaats 332	Eastern Kalahari Bushveld	Depression	D/E/F

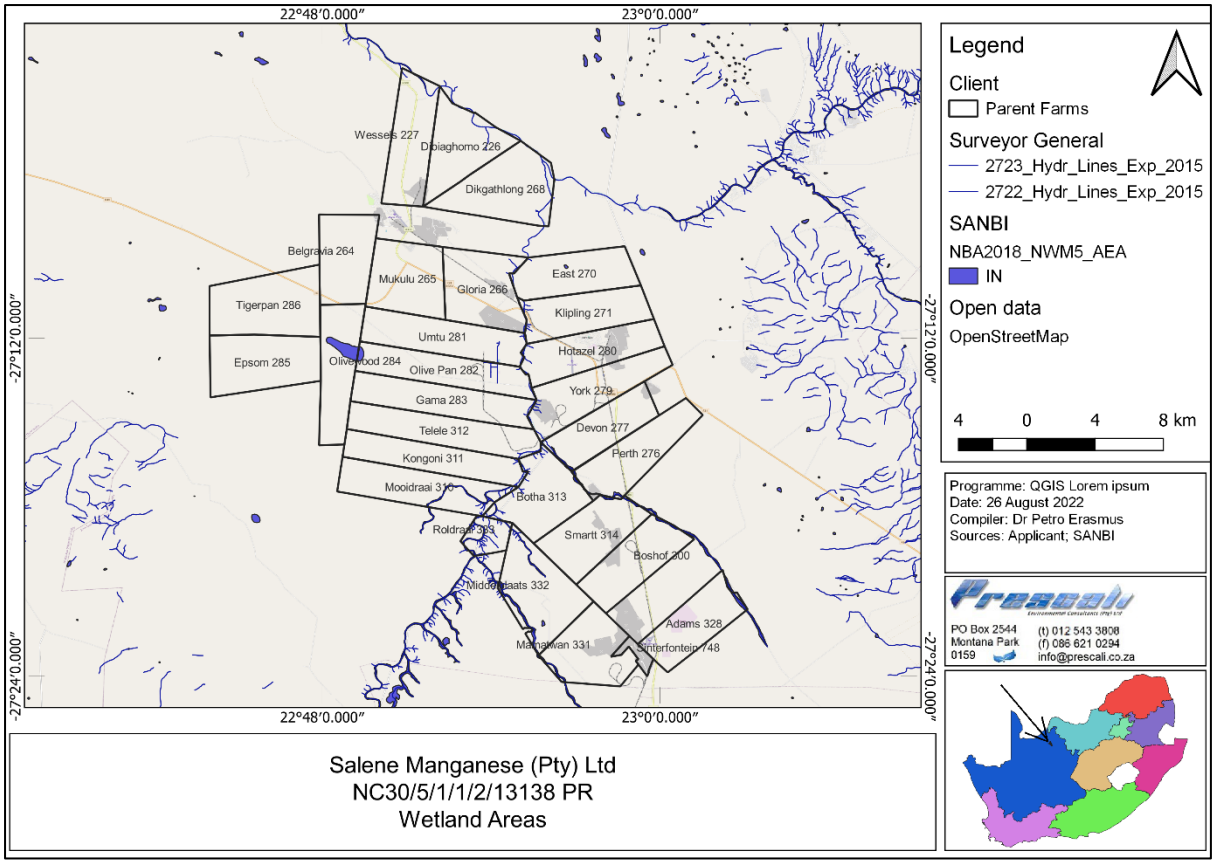

Figure 10-18: Wetlands within the prospecting application area

10.9. Groundwater

From WR2012 the Lithology description is described as "porous unconsolidated to semi-consolidated Kalahari sediment, acid, intermediate or alkaline intrusives & dolomite, chert and subordinate limestone". Figure 10-20 shows the groundwater aquifer type and yields. Figure 10-21 shows average groundwater levels of the prospecting application area. The entire proposed prospecting area has an average groundwater level of 54,23 mbgl. Transmissivity across the prospecting application area range between 25 to 250 m2/day. The 100 m^2/day follows along the Ga-Mogara River.

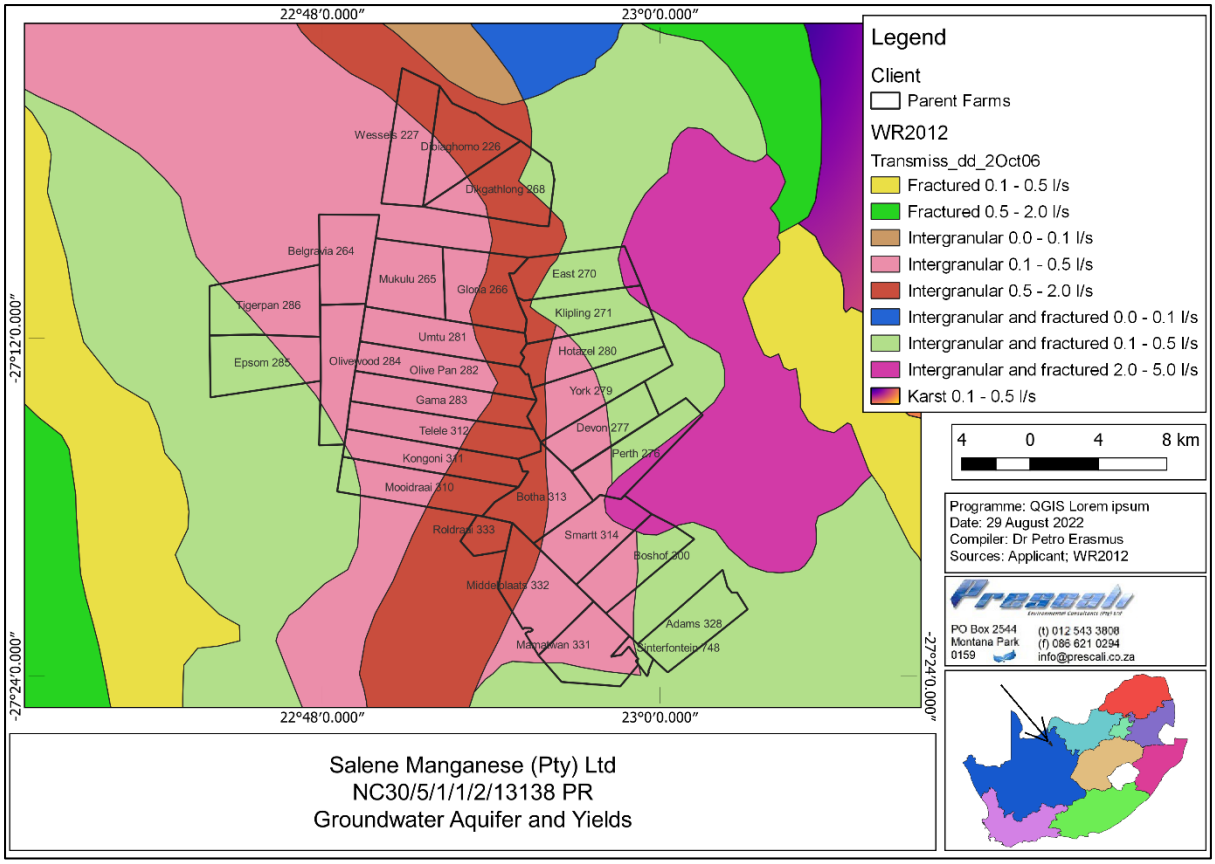

Figure 10-19: Aquifer types and yields

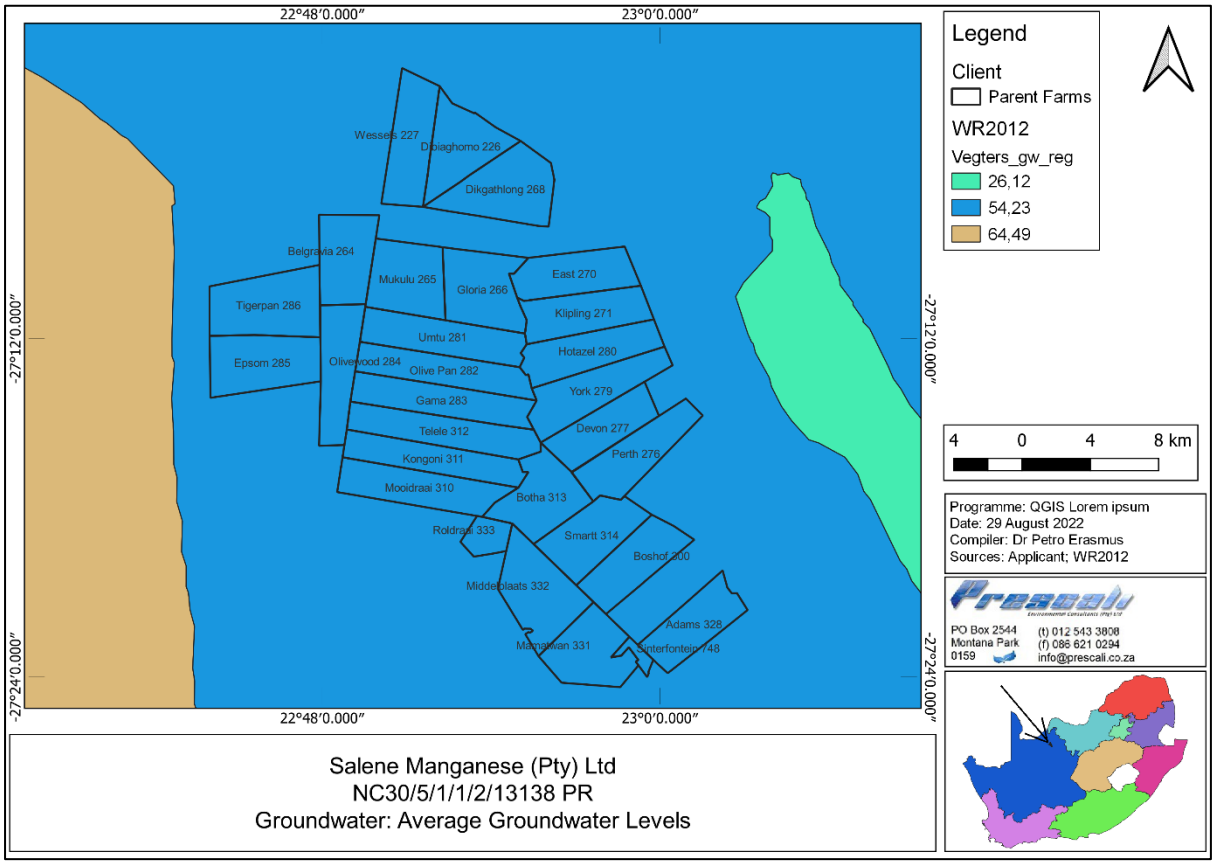

Figure 10-20: Average groundwater Levels

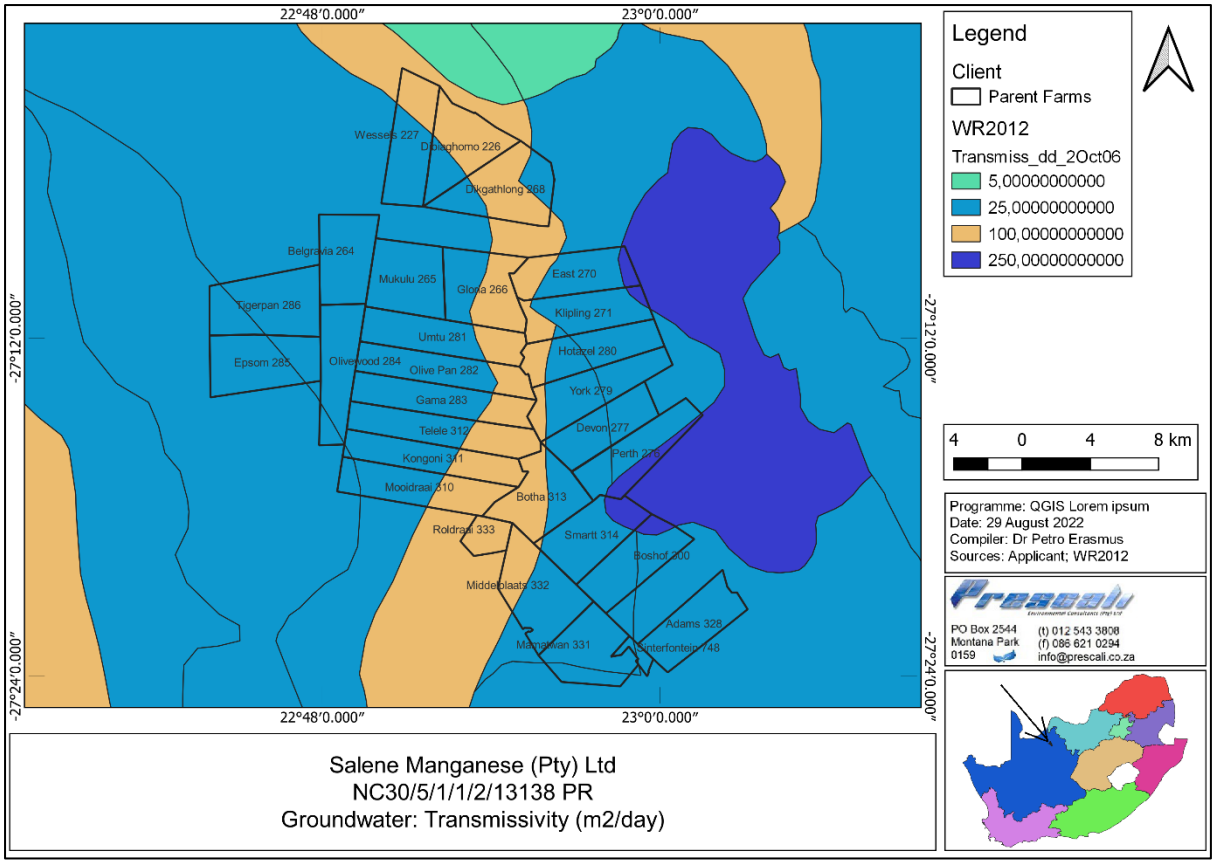

Figure 10-21: Groundwater Transmissivity

10.10. Air Quality

There are several mining operations in and around the prospecting application area which presently contribute to the existing levels of atmospheric pollution. Given the arid nature of the area in combination with existing mining operations, current levels of particulate matter (PM) in the atmosphere are expected to be elevated. Existing land uses such as mining and agriculture contribute to baseline pollutant concentrations via the following sources:

- Mining sources: Particulates represent the main pollutant of concern at mining operations. The amount of dust emitted by these activities depends on the physical characteristics of the material, the way in which the material is handled and the weather conditions.
- Unpaved and paved roads: Emissions from unpaved roads constitute a major source of emissions to the atmosphere in the South African context. Dust emissions from unpaved roads vary in relation to the vehicle traffic and the silt loading on the roads. Emission from paved roads is significantly less than those originating from unpaved roads, however they do contribute to the particulate load of the atmosphere. Particulate emissions occur whenever vehicles travel over a paved surface. The fugitive dust emissions are due to the re-suspension of loose material on the road surface.
- Wind erosion and open areas: Windblown dust generates from natural and anthropogenic sources. Erodible surfaces may occur as a result of agriculture and/or grazing activities.
- Vehicle tailpipe emissions: Emissions resulting from motor vehicles can be grouped into primary and secondary pollutants. While primary pollutants are emitted directly into the atmosphere, secondary pollutants form in the atmosphere as a result of chemical reactions. Significant primary pollutants emitted combustion engines include carbon dioxide (CO_2), carbon (C), sulphur dioxide (SO_2), oxides of nitrogen (mainly NO), particulates and lead. Secondary pollutants include NO_2, photochemical oxidants such as ozone, sulphur acid, sulphates, nitric acid, and nitrate aerosols (particulate matter).

10.11. Heritage and Cultural Resources

The proposed activities will (as far as possible) take place within existing mining / residue deposit and stockpile areas at the 12 locations as identified (Figure 4-1) thus it is unlikely that areas of heritage and palaeontological significance will be affected by the sampling activities.

Located south of the prospecting application area, the Gamagara Municipality area owns an endemic camel-thorn tree forest, which enjoys a National Heritage status. The tree gave Kathu its name; the "town under the trees". The Kathu forest situated north of the town of Kathu has been declared a protected woodland in terms of section 12(1) (c) of the National Forests Act (1998) by the Minister of Agriculture, Forestry and Fisheries. This was confirmed in the Government gazette dated 10 July 2009. The Kathu Forest is a unique woodland of exceptionally large camel thorn trees (*Vachellia erioloba*). The woodland of approximately 4000 hectares is one of only two such woodlands in the world. The Kathu forest was registered as a national heritage site in 1995. The farms and portions that make up the forest are currently privately owned.

10.12. Socio Economy Situation

Information in this section was sourced from the Joe Morolong LM Integrated Development Plant (IDP) 2021-2022.

The Joe Morolong LM (previously the Moshaweng LM) is a category B municipality that covers approximately 20 215 km^2 with one semi-urban area, villages (183) and commercial farms. There are Tribal authorities with eight (8) Paramount chiefs.

Based on the 2016 Census information, the LM population is 84 000 consisting of 55% females and 45% males. This LM shows a negative population growth as a result of migrations to Ga-Segonyana and Gamagara. 97% of the population is Black African, followed by White (2%) and coloured (1%). The most spoken language is Setswane (92%), followed by Afrikaans (3%) and other (3%).

With regards to services, there are 168 schools, 4 police stations, 24 clinics and 3 community health centres.

The priority economic sectors are Agriculture, mining and community services and the following mining houses: UMK, South 32, Assmang Blackrock, Tshipi-e-Ntle, Kalagadi, Kudumane Mining Resources, Baga Phadima Sand Mining, Sebilo, Mokala Manganese, East Manganese, Khwara and Lehating. The number of employment (jobs) created per sector are:

Sector	Number of jobs created
Agriculture related work	720
Manufacturing	144
Mining, Quarrying	471
Electricity, gas, water	116
Construction	283
Wholesale, Retail	432
Transport	122
Business services	100
Community services	1 693
Undetermined	87 171

Employment statistics indicate that 89 530 people are economical active:

Employed	Unemployed	Discouraged work seeker	Other not economically active	Not applicable
7 828	4 912	6 200	29 569	41 022

Education levels in the LM are:

Education Level	%
No schooling	15%
Some primary school	25 %
Primary	5%
Some Secondary school	33%
Grade 12	15%
Under graduate	2%

10.13. Description of the current land uses

The land use in the prospecting application area is mining, agricultural and residential. The 2020 land cover (as available from the EGIS website) is indicated in Figure 10-22.

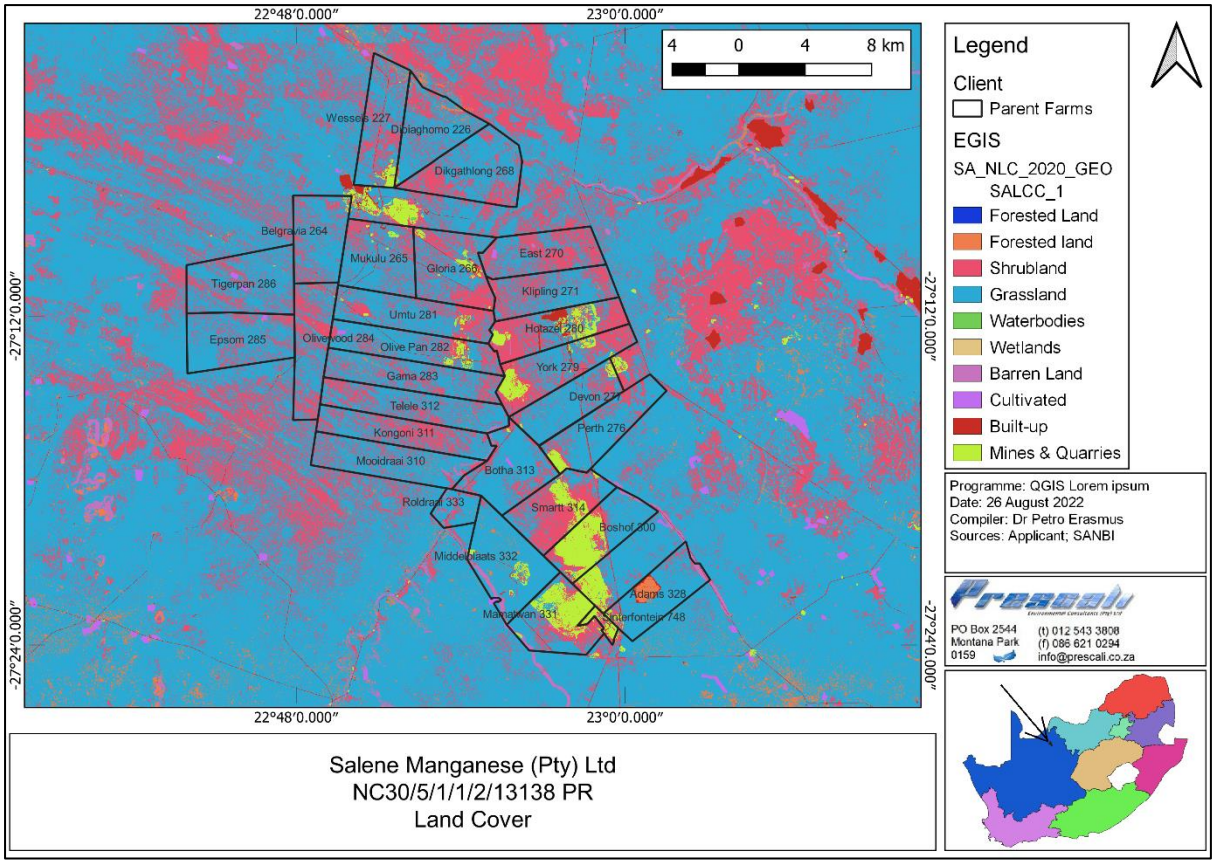

Figure 10-22: Land cover

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

The proposed sampling activities as applicable to this report, will take place mainly in already disturbed areas such as mining residue stockpiles /deposit area, no other areas will be disturbed especially any Greenfields areas. Existing access roads will be used to access the site.

Should it be deemed viable to expand the sampling plan an amendment to the Environmental authorisation and BAR/EMPr will be needed.

10.15. Environmental and current land use map

(Show all environmental, and current land use features)

Please refer to Figure 10-22.

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

The proposed prospecting activities to be undertaken include the use of both invasive and non-invasive prospecting techniques. There will therefore be physical disturbance to selected areas within the application area although this disturbance will be limited to the identified sampling sites and not the entire application area. Samples will be taken from existing residue deposits / stockpile areas. Approximately 10 samples to be collected within a radius of approximately 500 m from each of the 12 sample points that have been identified. Each surface sample will not disturb more than 1 m^2. Initial sampling collection will be done using picks and shovels.

The positive impact of the proposed activity is the discovery of economically viable mineral resources within the Joe Morolong Local Municipalities.

It should be noted that this report made available to I&AP's for review and comment and their comments and concerns will be taken into account in this BAR. Furthermore, it should be noted that the impact scores themselves will include the results of the public response and comment. Please refer to Section 11.1 for the Methodology used in determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks.

The access roads may over time and continuous use deteriorate and become damaged. The potential exists for a group of unfamiliar workers to enter the project area during the prospecting activities. This impact could potentially affect the local communities; however, the impact will be minimal as people on site will be limited to the Applicant, contractor and geologists for the topographical and geophysical surveys.

The removal of natural vegetation to accommodate the sampling of may reduce the habitat available for fauna species and may reduce animal populations and species compositions within the area, at least temporarily. Access to the application area for the topographical, geophysical survey and sampling will be required which may interrupt the existing land uses, i.e., mining. However, this impact will be minimal as it is of short duration. Provisions have been made for the rehabilitation of all areas disturbed during prospecting.

It is unlikely that the prospecting activities will generate general waste during the operational phase. Ay waste that is generated must be collected during site visits to be disposed of at appropriate landfill sites.

A summary of the positive and negative impacts of the proposed activity are provided in below.

Table 11-1: Identified Positive and Negative Impacts

Aspect	Activity	Impact	Phase	Positive / Negative
All	Planning of prospecting activities	No impacts are foreseen due to the non-invasive nature of the planning phase	All	N/A
All	Consultation of affected parties	N/A	All	N/A
All	Potential construction of roads and infrastructure	None foreseen as existing access roads will be used to access the proposed sampling areas	Co	N/A
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Temporary disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Loss of CBA1 and ESA and other sections of area classed as other natural Areas	O	Negative
	Collection of surface samples from 10 points in	Displacement of Faunal community due to temporary	O	Negative

Aspect	Activity	Impact	Phase	Positive / Negative
	a radius of 500 m for each of the 12 sites	habitat loss, disturbance (noise, dust, and vibration) and/or direct mortalities		
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Continued disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Encroachment by alien invasive plant species	O, CI	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Further impacts due to the spread and/or establishment of alien and/or invasive species	O	Negative
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Further impacts due to the spread and/or establishment of alien and/or invasive species	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbances such as dust, vibrations poaching and noise.	O	Negative
Groundwater	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Degradation of aquifers	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts of existing groundwater users	O	Negative
Heritage Resources	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts on potential burial grounds and graves	O	Negative
	Collection of surface samples from 10 points in	Impacts on archaeological resources	O	Negative

Aspect	Activity	Impact	Phase	Positive / Negative
	a radius of 500 m for each of the 12 sites			
Noise	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Noise nuisance	O	Negative
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Pollution of soil	O	Negative
Air	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Air Quality	O	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Deterioration and damage to existing access roads and tracks	O, D	Negative
Socio-economic	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential job creation	O, D	Positive
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Safety and security to existing landowners and lawful occupier	O, D	Negative
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Interference with existing land uses	O, D	Negative
Waste	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Generation and disposal of waste	O, D	Negative
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Erosion due to improper rehabilitation	D	Negative
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential soil pollution from hydrocarbons spills from vehicles used to access the stie	O	Negative
Land Use	Site access to the proposed sampling site	Potential impact on the disposal of waste on the sampling area by the operational mining company	O	Negative
Land Use	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential impact on the disposal of waste on the sampling area by the operational mining company	O	Negative
Service provision: Electricity	Site access to the proposed sampling site	Potential overlap with existing ESKOM infrastructure or future planned expansion.	O	Negative
Service provision: Electricity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential overlap with existing ESKOM infrastructure or future planned expansion.	O	Negative

Aspect	Activity	Impact	Phase	Positive / Negative
All	Rehabilitation of disturbed sites	Rehabilitation of sampling area to predetermined land use	Re	Positive

11.1. Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks

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

11.1.1. Assessment Criteria

The criteria for the description and assessment of environmental impacts were drawn from the EIA Guidelines (DEAT, 1998) and as amended from time to time (DEAT, 2002).

The level of detail as depicted in the EIA Guidelines (DEAT, 2002) was fine-tuned by assigning specific values to each impact. In order to establish a coherent framework within which all impacts could be objectively assessed, it was necessary to establish a rating system, which was applied consistently to all the criteria. For such purposes each aspect was assigned a value, ranging from one (1) to five (5), depending on its definition. This assessment is a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

An explanation of the impact assessment criteria is defined below.

Table 11-2: Impact Assessment Criteria

EXTENT	
Classification of the physical and spatial scale of the impact	
Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.
Site	The impact could affect the whole, or a significant portion of the site.
Regional	The impact could affect the area including the neighbouring farms, the transport routes and the adjoining towns.
National	The impact could have an effect that expands throughout the country (South Africa).
International	Where the impact has international ramifications that extend beyond the boundaries of South Africa.
DURATION	
The lifetime of the impact that is measured in relation to the lifetime of the proposed development.	
Short term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the Site Establishment phase.
Short to Medium term	The impact will be relevant through to the end of a Site Establishment phase (1.5 years).
Medium term	The impact will last up to the end of the development phases, where after it will be entirely negated.
Long term	The impact will continue or last for the entire operational lifetime i.e. exceed 30 years of the development, but will be mitigated by direct human action or by natural processes thereafter.
Permanent	This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.
INTENSITY	
The intensity of the impact is considered by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. The intensity is rated as	
Low	The impact alters the affected environment in such a way that the natural processes or functions are not affected.
Medium	The affected environment is altered, but functions and processes continue, albeit in a modified way.

High	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.
PROBABILITY	
This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:	
Improbable	The possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is zero (0 %).
Possible	The possibility of the impact occurring is very low, due either to the circumstances, design or experience. The chances of this impact occurring is defined as 25 %.
Likely	There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50 %.
Highly Likely	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75 %.
Definite	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100 %.

The status of the impacts and degree of confidence with respect to the assessment of the significance must be stated as follows:

- **Status of the impact:** A description as to whether the impact would be positive (a benefit), negative (a cost), or neutral.
- **Degree of confidence in predictions:** The degree of confidence in the predictions, based on the availability of information and specialist knowledge.

Other aspects to take into consideration in the specialist studies are:

- Impacts should be described both before and after the proposed mitigation and management measures have been implemented.
- All impacts should be evaluated for the full-lifecycle of the proposed development, including Site Establishment, operation and decommissioning.
- The impact evaluation should take into consideration the cumulative effects associated with this and other facilities which are either developed or in the process of being developed in the region.
- The specialist studies must attempt to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where appropriate, national standards are to be used as a measure of the level of impact.

11.1.2. Mitigation

The impacts that are generated by the development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts in order to minimise impacts and achieve sustainable development.

11.1.3. Determination of Significance-Without Mitigation

Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact “without mitigation” is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as “positive”. Significance is rated on the following scale:

Table 11-3: Significance-Without Mitigation

NO SIGNIFICANCE	The impact is not substantial and does not require any mitigation action.
LOW	The impact is of little importance, but may require limited mitigation.
MEDIUM	The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

HIGH	The impact is of major importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

11.1.4. Determination of Significance- With Mitigation

Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures. Significance with mitigation is rated on the following scale:

Table 11-4: Significance-With Mitigation

NO SIGNIFICANCE	The impact will be mitigated to the point where it is regarded as insubstantial.
LOW	The impact will be mitigated to the point where it is of limited importance.
LOW TO MEDIUM	The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels.
MEDIUM	Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.
MEDIUM TO HIGH	The impact is of major importance but through the implementation of the correct mitigation measures, the negative impacts will be reduced to acceptable levels.
HIGH	The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

11.1.5. Assessment Weighting

Each aspect within an impact description was assigned a series of quantitative criteria. Such criteria are likely to differ during the different stages of the project's life cycle. In order to establish a defined base upon which it becomes feasible to make an informed decision, it was necessary to weigh and rank all the criteria.

11.1.6. Ranking, Weighting and Scaling

For each impact under scrutiny, a scaled weighting factor is attached to each respective impact (refer Table 11-5).

The purpose of assigning weights serves to highlight those aspects considered the most critical to the various stakeholders and ensure that each specialist's element of bias is taken into account. The weighting factor also provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspect criteria.

Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance.

Table 11-5: Description of assessment parameters with its respective weighting

EXTENT		**DURATION**		**INTENSITY**		**PROBABILITY**		**WEIGHTING FACTOR (WF)**		**SIGNIFICANCE RATING (SR)**	
Footprint	1	Short term	1	Low	1	Improbable	1	Low	1	Low	0-19
Site	2	Short to Medium	2			Possible	2	Low to Medium	2	Low to Medium	20-39
Regional	3	Medium term	3	Medium	3	Likely	3	Medium	3	Medium	40-59
National	4	Long term	4			Highly Likely	4	Medium to High	4	Medium to High	60-79

EXTENT		DURATION		INTENSITY		PROBABILITY		WEIGHTING FACTOR (WF)		SIGNIFICANCE RATING (SR)	
International	5	Permanent	5	High	5	Definite	5	High	5	High	80-100

MITIGATION EFFICIENCY (ME)		SIGNIFICANCE FOLLOWING MITIGATION (SFM)	
High	0.2	Low	0 - 19
Medium to High	0.4	Low to Medium	20 - 39
Medium	0.6	Medium	40 - 59
Low to Medium	0.8	Medium to High	60 - 79
Low	1.0	High	80 - 100

11.1.7. Identifying the Potential Impacts Without Mitigation Measures (WOM)

Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

Equation 1:

Significance Rating (WOM) = (Extent + Intensity + Duration + Probability) x Weighting Factor

11.1.8. Identifying the Potential Impacts with Mitigation Measures (WM)

In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it was necessary to re-evaluate the impact.

11.1.8.1. Mitigation Efficiency (ME)

The most effective means of deriving a quantitative value of mitigated impacts is to assign each significance rating value (WOM) a mitigation efficiency (ME) rating (refer to *Table* 11-5).

The allocation of such a rating is a measure of the efficiency and effectiveness, as identified through professional experience and Empirical evidence of how effectively the proposed mitigation measures will manage the impact.

Thus, the lower the assigned value the greater the effectiveness of the proposed mitigation measures and subsequently, the lower the impacts with mitigation.

Equation 2:

Significance Rating (WM) = Significance Rating (WOM) x Mitigation Efficiency
or WM = WOM x ME

11.1.9. Significance Following Mitigation (SFM)

The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact is therefore seen in its entirety with all considerations taken into account

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

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

The mitigation measures have addressed in the Section 12 under Environmental Impact Assessment.

11.3. Motivation where no alternative sites were considered

Minerals are site specific and accordingly alternative sites were not selected for this project as the aim of the prospecting activities is to determine if the selected minerals are present in viable quantities. The locations for the proposed sampling areas (12) were based on the potential location of existing mining

impacts such as residue deposits / stockpile, no other areas will be disturbed especially any greenfields areas. If prospecting does not indicate the desired mineral to be mined, alternative sites will be considered by the applicant and an amendment will be applied for. All sensitive features have been considered and will be excluded from the prospecting activities.

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

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

Since exploration is temporary in nature no permanent structures will be constructed, negotiations and agreements will be made with the applicable mining companies / farm owners / surface right users to use any existing infrastructure such as access roads, etc. In addition to the information provided, each of the phases is dependent on the results and success of the preceding phase. The location and extent of sampling will be determined based on information derived from the surveys.

As discussed above, the proposed application area has been selected due to the geology of the site and the anticipated favourable tectono-stratigraphic setting of the prospect area. There are no protected areas within the application area. The land or properties affected are existing residue deposits / stockpiles and therefore the potential discovery of additional viable minerals within the application area would be beneficial in terms of waste reduction should the minerals be present in viable quantities.

The impacts of the development alternative are low-medium to low and would reduce to low should the proposed mitigation measures be implemented accordingly.

11.5. Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site.

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

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

- The stakeholder consultation process is currently undertaken in a manner to be interactive, providing landowners and identified stakeholders with the opportunity to provide input into the project. This is a key focus, as the local residence has capabilities of providing site specific information, which may not be available in desktop research material. Stakeholders are requested to provide their views on the project and any potential concerns which they may have. All comments and concerns are captured and formulated into the impact assessment.
- A detailed desktop investigation was undertaken to determine the environmental setting in which the project is located. Based on the desktop investigations various resources were used to determine the significance and sensitivity of the various environmental considerations. The desktop investigation involved the use of:
  - Detailed mapping based on existing data sources applicable to the study area;
  - Geographic Information System base maps;
  - Literature and existing data/reports for the study area
- A site visit will be conducted to ensure that the information gathered as part of the desktop investigation reflects the current status of the land.
- The ratings of the identified impacts were undertaken in a quantitative manner as provided in Impact Assessment Section. The ratings were undertaken in a manner to calculate the significance of each of the impacts. The EAP also assesses the outcomes of the calculation to determine whether the outcome reflects the perceived and the actual views.
- The identification of management measures are done based on the significance of the impacts and measures that have been considered appropriate and successful, specifically as Best Practical and Economical Options.

12. 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).

Table 12-1: Impact Assessment Rating (Pl: Planning, Co: Construction, Op: Operation, Cl: Closure, Dc: Decommissioning, Re: Rehabilitation)

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
All	Planning of prospecting activities	No impacts are foreseen due to the non-invasive nature of the planning phase	All	N/A	N/A	N/A	N/A	N/A	N/A		
All	Consultation of affected parties	N/A	All	N/A	N/A	N/A	N/A	N/A	N/A		
All	Potential construction of roads and infrastructure	None foreseen as existing access roads will be used to access the proposed sampling areas	Co	N/A	N/A	N/A	N/A	N/A	N/A		
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Temporary disturbance of wildlife due to increased human presence and possible use of machinery	O	Footprint	Short term	Low	Possible	Low to medium	Low	Medium - High	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
		and/or vehicles									
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	O	Site	Short term	Low	Possible	Low to medium	Low	Medium - High	Low
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	O	Site	Short term	Low	Possible	Low to medium	Low	Medium - High	Low
	Site clearance (if	Loss of CBA1 and	O	Site	Short term	Low	Possible	Low to medium	Low	High	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
	needed) to allow for collection of 10 samples in a 500 m radius	ESA and other sections of area classed as other natural Areas									
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Displacement of Faunal community due to temporary habitat loss, disturbance (noise, dust, and vibration) and/or direct mortalities	O	Site	Short term	Low	Possible	Low to medium	Low	Medium - High	Low
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Continued disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	O	Footprint	Short to Medium term	Low	Possible	Low to medium	Low	Medium - High	Low
	Site clearance (if needed) to allow for collection of	Encroachment by alien invasive plant species	O, Cl	Footprint	Medium term	Low	Possible	Low to medium	Low	Medium	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
	10 samples in a 500 m radius										
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	O	Site	Short to Medium term	Low	Possible	Low to medium	Low	Medium - High	Low
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	O	Site	Short to Medium term	Low	Possible	Low to medium	Low	Medium - High	Low
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	O	Site	Short term	Low	Possible	Low to medium	Low	Medium - High	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	O	Site	Short term	Low	Possible	Low to medium	Low	Medium - High	Low
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Further impacts due to the spread and/or establishment of alien and/or invasive species	O	Site	Medium term	Low	Possible	Low to medium	Low	High	Low
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Further impacts due to the spread and/or establishment of alien and/or invasive species	O	Site	Medium term	Low	Possible	Low to medium	Low	High	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbances such as dust, vibrations poaching and noise.	O	Site	Short to Medium term	Low	Possible	Low to medium	Low	High	Low
Ground water	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Degradation of aquifers	O	Site	Medium term	Low	Possible	Low to medium	Low	Medium - High	Low
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts of existing groundwater users	O	Site	Medium term	Low	Possible	Low to medium	Low	Medium	Low
Heritage Resources	Collection of surface samples	Impacts on potential burial	O	Footprint	Short to Medium term	Low	Improbable	Low to medium	Low	High	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
	from 10 points in a radius of 500 m for each of the 12 sites	grounds and graves									
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts on archaeological resources	O	Footprint	Short to Medium term	Low	Improbable	Low	Low	High	Low
Noise	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Noise nuisance	O	Site	Short to Medium term	Low	Possible	Low to medium	Low	Medium - High	Low
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Pollution of soil	O	Site	Short to Medium term	Low	Possible	Low	Low	High	Low
Air	Collection of surface samples from 10 points in a radius of 500	Air Quality	O	Site	Short to Medium term	Low	Possible	Low to medium	Low	Medium	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
	m for each of the 12 sites										
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Deterioration and damage to existing access roads and tracks	O, D	Site	Medium term	Low	Possible	Low to medium	Low	High	Low
Socio-economic	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential job creation	O, D	Regional	Medium term	Medium	Possible	Low	Low	High	Low
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Safety and security to existing landowners and lawful occupier	O, D	Site	Medium term	Medium	Possible	Low to medium	Low - Medium	Medium - High	Low
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Interference with existing land uses	O, D	Site	Medium term	Medium	Possible	Low to medium	Low - Medium	Medium	Low

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
Waste	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Generation and disposal of waste	O, D	Site	Short term	Low	Possible	Low	Low	High	Low
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Erosion due to improper rehabilitation	D	Footprint	Short term	Low	Possible	Low to medium	Low	High	Low
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential soil pollution from hydrocarbons spills from vehicles used to access the stie	O	Footprint	Short term	Low	Possible	Low to medium	Low	High	Low
Land Use	Site access to the proposed sampling site	Potential impact on the disposal of waste on the sampling area by the operational mining company	O	Site	Short term	Medium	Likely	High	Medium	Medium	Low-Medium

Aspect	Activity	Impact	Phase	Extend	Duration	Intensity	Probability	Weighing Factor	Significance	Mitigation Efficiency	Significance with Mitigation
Land Use	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential impact on the disposal of waste on the sampling area by the operational mining company	O	Site	Short term	Medium	Likely	High	Medium	Medium	Low-Medium
Service provision: Electricity	Site access to the proposed sampling site	Potential overlap with existing ESKOM infrastructure or future planned expansion.	O	Site	Short term	Medium	Possible	High	Medium	Medium	Low-Medium
Service provision: Electricity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential overlap with existing ESKOM infrastructure or future planned expansion.	O	Site	Short term	Medium	Possible	High	Medium	Medium	Low-Medium
All	Rehabilitation of disturbed sites	Rehabilitation of sampling area to predetermined land use	Re	Footprint	Short term	Low	Possible	Low to medium	Low	High	Low

13.SUMMARY OF SPECIALIST REPORTS.

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

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations that have been included in the eia report *(mark with an x where applicable)*	Reference to applicable section of report where specialist recommendations have been included.
No specialists were appointed for this project and all information is based on available documentation for the area			

14.ENVIRONMENTAL IMPACT STATEMENT

14.1. Summary of the key findings of the environmental impact assessment

The findings are that the proposed prospecting activities will result in low, low to medium and medium impact for the identified aspects of the physical and socio-economic environment. Low impacts in terms of disturbances such as dust, lighting and noise may arise from the sampling activities. The highest rating, medium were identified on the operational aspects of the residue deposits / stockpiles on which the proposed sampling activities will take place.

All-natural areas including watercourses/wetlands and primary vegetation areas have been excluded from sampling sites.

All historical features such as buildings and graves/graveyards have been excluded from sampling sites.

There is a risk of hydrocarbon pollution due to leakage from vehicles and machinery, but this can be managed and mitigated to acceptable levels.

Monitoring of the required mitigation measures is to take place on site at a continuous basis by the project manager, contractors and Environmental Control Office (ECO).

Annual monitoring audits are to take place by an appointed independent environmental assessment practitioner.

14.1.1. 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. Attach as Appendix 4

The whole applicable area sensitivity is indicated in Figure 14-1.

Figure 14-2 shows the location of the 12 sampling sites where about 10 samples will be taken from each sampling site within a 500 m radius. The exact location of the 10 sub-sampling points cannot be pinpointed as the prospecting activities are conducted in phases, and each phase depends on the success of the previous phase. Within the 500 m radius of the 12 surface sample points, 10 samples will be collected. When the geologist goes to site they will have to determine where they will get a representative sample. ***Again from this figure it is noted that some of the sites and 500 m radius fall within areas classified as Very High. Reference is again made to Table 10-3 that indicate that the proposed area is already disturbed by the mining activities thus it is proposed that the sensitivity rating of Very High for these already impacted areas can be reduced to Medium.***

Should drilling be needed for phase two, the drill points will be identified after the first sampling phase have confirmed the presence of the ore body. The sensitive areas for future phases will be identified during the planning phase of the project and no activities will be undertaken at any sensitive area. A detailed map can be produced after the sampling surveys has been undertaken, although the map will be subjected to changes depending on the results of the preliminary sampling.

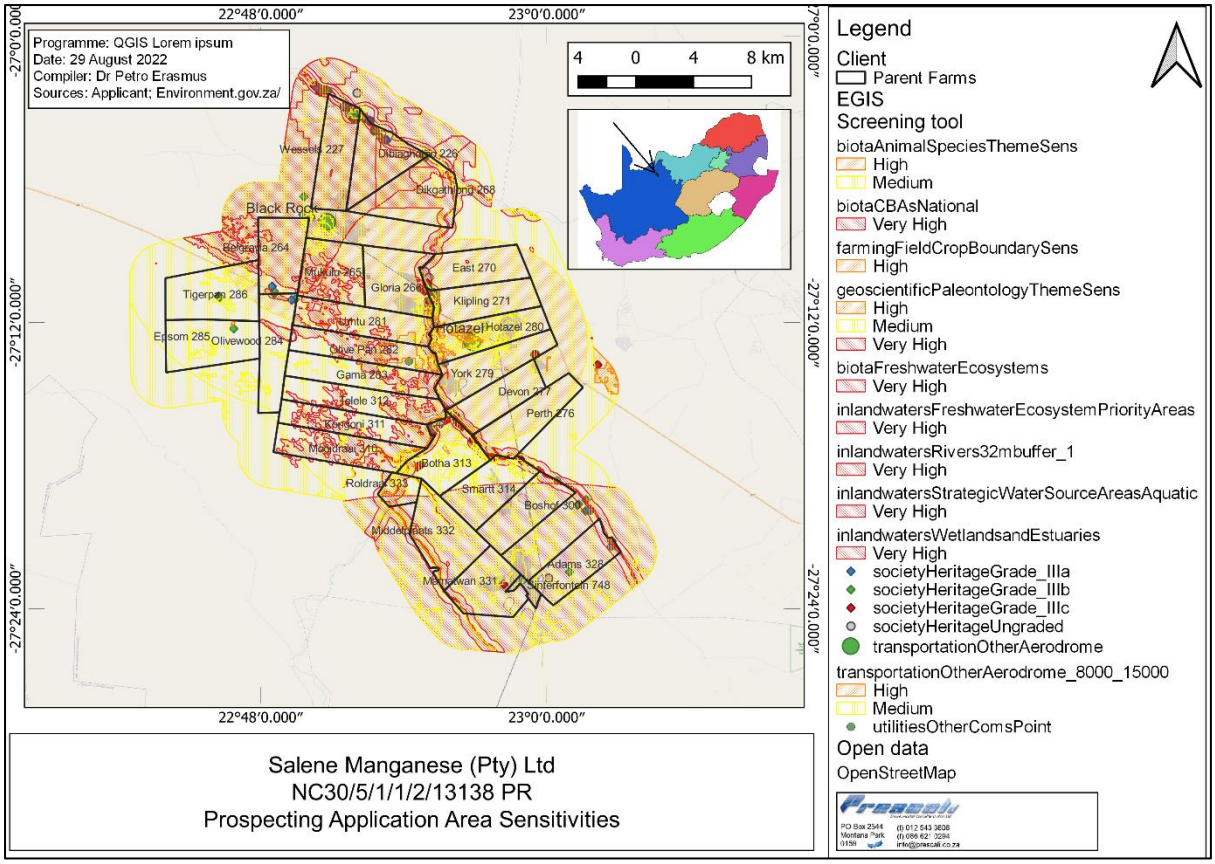

Figure 14-1: Application area sensitivities

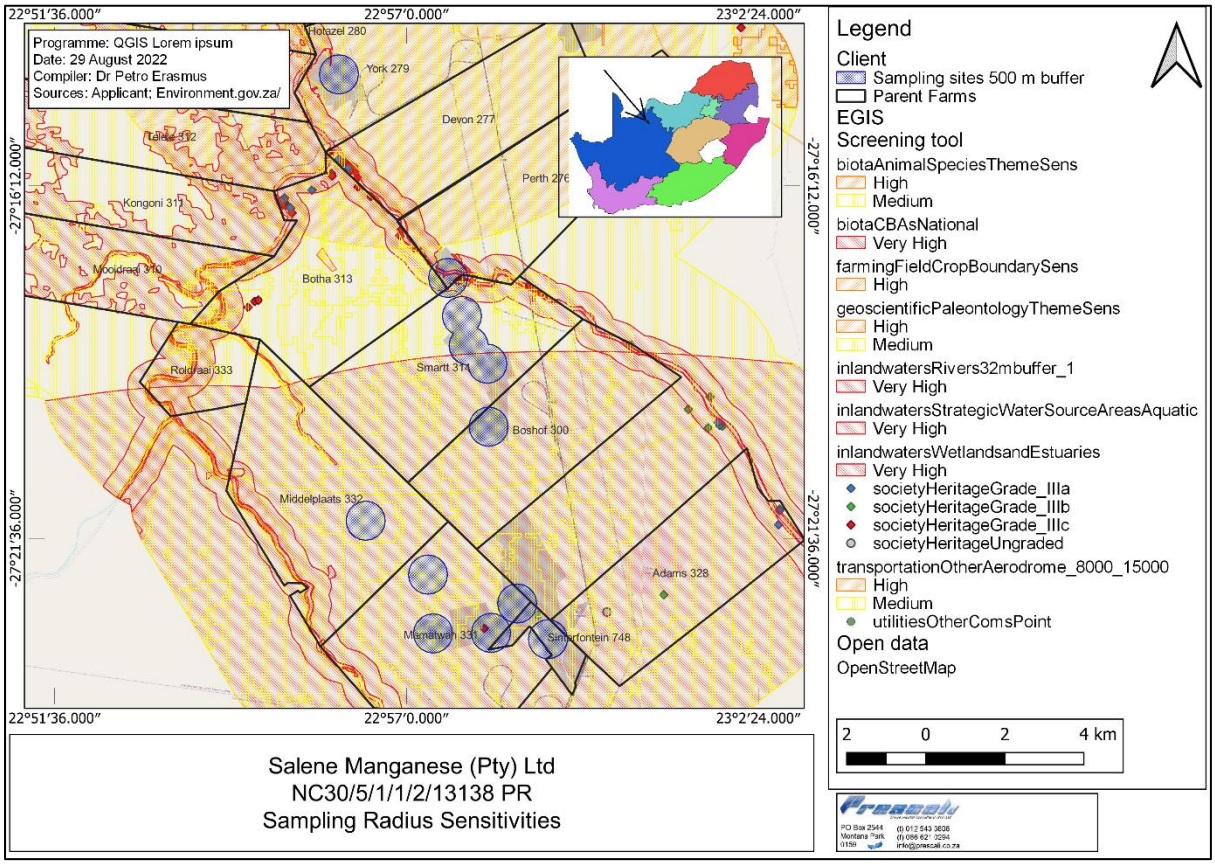

Figure 14-2: Final Site Map with sensitivities for the 500 m radius around each sampling point (medium, high and very high) as per the Screening tool

14.1.2. Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

Refer to Table 11-1 which highlights all the positive and negative impacts for the proposed prospecting activities. The proposed activities have low significance since these are short term activities that will take place on already disturbed areas, however socio-economic impacts such as employment has a medium significance. The probability of occurrence of an impact was determined and most of these activities can be controlled and impacts can be reduced or avoided. Generally, depending on the type of prospecting activities proposed, prospecting activities have low impact on the environment. The planned activities negative impacts can be controlled and avoided or minimised therefore the layout does not require revision. Mitigation measures will be utilised to control, avoid and/or minimise all identified potential impacts.

15. 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.

Impact management objectives are described in terms a Mitigation Hierarchy proposed as follows:

- **Avoid at Source:** Reduce at Source: avoiding or reducing at source through the design of the Project (e.g., avoiding by placing or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity).
- **Abate on Site:** add something to the design to abate the impact (e.g., pollution control equipment, installation of noise silencers, operate in daylight hours).
- **Abate at Receptor:** if an impact cannot be abated on-site then control measures can be implemented off-site (e.g., noise barriers to reduce noise impact at a nearby residence or fencing to prevent animals straying onto the site).
- **Repair or Remedy:** some impacts involve unavoidable damage to a resource (e.g. agricultural land due to creating access, work camps or materials storage areas) and these impacts can be addressed through repair, restoration or reinstatement measures.
- **Compensate in Kind; Compensate Through Other Means:** where other mitigation approaches are not possible or fully effective, then compensation for loss, damage and disturbance might be appropriate (e.g., planting to replace damaged vegetation, financial compensation for damaged crops or providing community facilities for loss of resources, recreation and amenity space)

The EMPr will seek to achieve a required end state and describe how activities could have an adverse impact on the environment will be mitigated, controlled and monitored. The EMPr will address the environmental impacts during the Operational, and Decommissioning Phases of the proposed project as no impacts were identified during the Planning and Construction phases. Due regard will be given to environmental protection during the entire project. A number of environmental recommendations will therefore be made to achieve environmental protection. The environmental and social objectives will be set to allow prospecting in an environmental and socially responsible manner while ensuring that sustainable closure can be achieved. To achieve closure, the correct decisions need to be taken during the planning phase of the project.

The overall goal for environmental management for the proposed is to manage and operate the project in a manner that:

- Minimises the ecological footprint of the project on the local environment;
- Facilitates harmonious co-existence between the project and other land uses / operational mining activities in the area;
- Contributes to the environmental baseline and understanding of environmental impacts of Prospecting activities in a South African context.

The following environmental management objectives are recommended for the proposed mineral prospecting development and associated infrastructure (none identified):

- Monitor soils (if any are present at the sampling site) so as to avoid unnecessary erosion, and implement erosion control measures to preserve the quality of the soil for rehabilitation;
- Development planning must restrict the area of impact to minimum and designated areas only;

- Monitor and prevent contamination, and undertake appropriate remedial actions;
- Limit the visual and noise impact on receptors;
- Avoid impact on possible heritage and archaeological resources;
- Ensure that accurate information regarding the prospecting activities to be undertaken and the resultant lack of requirements for site access and labour is communicated to I&APs;
- Prevent the unnecessary destruction of, and fragmentation, of the vegetation community (including portions of a CBA1, CBA2 and ESA and a section classed as high and highest biodiversity importance);
- Adhere to an open and transparent communication procedure with stakeholders at all times;
- Enhance project benefits and minimise negative impacts through consultation with stakeholders;
- To limit interference with existing land uses as far as possible during prospecting;
- Limit the impact on the groundwater and surface water features through the implementation of the EMPr and the impact mitigation measures;
- Promote health and safety of workers; and
- Limit dust and other emissions to within allowable limits.

16. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION.

Any aspects which must be made conditions of the Environmental Authorisation

Refer to Section 18.2 for the main management measures that should be included in the authorisation. In addition, the appointed contractors should adhere and be compliant with the health and safety requirements of the different mining areas in which the sampling will be conducted. Should drilling be required the correct procedure will be followed to obtain the required permissions and work instructions from the relevant surface occupiers. **Drilling will only be considered once sampling as outlined in this report for the 12 sites proves successful. This BAR only covers basic surface sampling activities. Should drilling be considered, an amendment to the environmental authorization will be applied for.**

17. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE.

(Which relate to the assessment and mitigation measures proposed)

- The EAP does not accept any responsibility in an event that additional information comes to light at a later stage of the process;
- All information provided by the EAP was correct at the time it was provided;
- The data from unpublished researches and open resources is valid and accurate;
- The scope of this investigation is limited to accessing the potential environmental impacts associated with the proposed project;
- The public participation process has sought to involve key stakeholders and individual landowners. It is assumed that where participation has been sought from the organisational representative/s, that these parties have the authority to comment on behalf of their organisation;
- Third party information provided by the applicant is correct at the time of writing this report;
- Prospecting activities will take place in phases and each phase is determined and dependent on the previous phase. Accordingly, the final drilling locations, if any, will only be determined later and an application for an amendment of the environmental authorisation will be lodged.

18. REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

18.1. Reasons why the activity should be authorized or not.

No fatal flaws were identified in terms of this project as long as the mitigation and recommendations proposed are adhered to. The impact assessment indicated no critical issues that cannot be lowered to an acceptable level through the suggested mitigation measures, resulting in a fatal flaw. All sensitive areas identified throughout the process will be excluded from the proposed development.

It is recommended by the EAP that the proposed prospecting could be authorised, on the assumption that the environmental and social management commitments included in this BAR/EMPr are adhered to, the project description remains as per the description provided in this document and considering the

positive social impacts associated with the project. It should also be ensured that proper rehabilitation is provided for and that risks are controlled by having emergency plans in place.

It is therefore the opinion of the EAP that the proposed activity should be authorised.

18.2. Conditions that must be included in the authorisation

Salene Manganese (Pty) Ltd should comply with all applicable legislation including those outlined in Part A, Section 6.

- Access agreements will be entered into with all holders of existing Mining Rights in order to comply with respective access and MHS standards.
- Notice must be given to landowners and surrounding landowners 1 month prior to any prospecting activities being conducted on their areas of responsibility;
- Landowners and land occupiers should be engaged at least 1 month prior to any site activities being undertaken;
- A map detailing the sub-sampling locations (10 within the 500 m radius of the sampling point) should be provided to the landowners as well as the DMR after completion of the prospecting activities;
- A record must be kept of the implementation of the EMPr measures and monitoring of the efficiency of the implemented measures;
- Measures and recommendations suggested in this report should be followed;
- An Environmental Control Officer should be appointed to do regular monitoring as suggested in the EMPr;
- In the unlikely event that graves / other sites of cultural / heritage significance are identified, these should be protected *in situ* and a 30 m buffer area should be applied where no prospecting activities may take place;
- All wetlands and watercourses should be protected *in situ* and a 30m buffer area should be applied where no prospecting activities may take place;
- The combined sensitivity map and the findings indicated in Table 10-3 as well as Part A, Section 14.1.1, should be followed where no activity may take place within highly sensitive areas; and
- Rehabilitation should take place immediately after work has ceased and should be done in a responsible manner.

19. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.

The Prospecting Right has been applied for a period of five (5) years. The Environmental Authorisation should therefore allow for the five years of prospecting and one year for decommissioning and rehabilitation.

Name Of Activity	Aerial Extent Of The Activity	Applicable Listing Notice	Time Frame For Authorization
Sampling site	10 x 12 Sampling Site 1 Sample site= 1 m^2 Total Sampling Site Area= 120 m^2	GNR 983 (as amended 07 April 2017) Listed Activity 20	5 Years
Rehabilitation and Closure	120 m^2	GNR 983 (as amended 07 April 2017) Listed Activity 22	1 Year after completion of prospecting

20. UNDERTAKING

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

The EAP undertakes that the information provided is correct, and that the comments and inputs from stakeholders and Interested and Affected parties have been correctly recorded in the report.

21.FINANCIAL PROVISION

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

The preliminary estimate of the rehabilitation cost is (inclusive of contingencies and VAT): **R4 655,86**.

Table 21-1: Quantum calculations

Calculation of the Quantum							
Applicant:	Salene Manganese (Pty) Ltd			**Reference:**	NC30/5/1/1/2/13138 PR		
EAP:	Prescali Environmental Consultants (Pty) Ltd			**Date:**	29/08/2022		
No	**Description**	**Unit**	**A**	**B**	**C**	**D**	**E=A*B*C*D**
			Quantity	**Master rate**	**Multiplication factor**	**Weighting factor 1**	**Amount (Rands)**
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines) - Vermiculite and SSP plant	m^3	0	16,14	1	1	R0,00
2 (A)	Demolition of steel buildings and structures (including floor slabs)	m^2	0	224,76	1	1	R0,00
2 (B)	Demolition of reinforced concrete buildings and structures (gate house, admin office, truckers ablution, clinic)	m^2	0	331,22	1	1	R0,00
3	Rehabilitation of access roads (13m width for 2,8 km)	m^2	0	40,22	1	1	R0,00
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	390,37	1	1	R0,00
4(B)	Demolition and rehabilitation of non-electrified railway lines	m	0	212,92	1	1	R0,00
5	Demolition of housing/and or administration facilities	m^2	0	449,51	1	1	R0,00
6	Opencast rehabilitation including final voids and ramps (vermiculite pit)	ha	0	228777,57	1	0,04	R0,00
7	Sealing of shafts adits and inclines	m^3	0	120,66	1	1	R0,00
8 (A)	Rehabilitation of overburden and spoils (vermiculite)	ha	0,012	152098,35	1	1	R1 825,18
8(B)	processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	195655,69	1	1	R0,00
8©	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	568276,85	1	1	R0,00
9	Rehabilitation of subsided areas	ha	0	121541,19	1	1	R0,00
10	General surface rehabilitation, including grassing of all denuded areas	ha	0,012	124443,64	1	1	R1 493,32
11	River diversions	ha	0	124443,64	1	1	R0,00
12	Fencing	ha	0	141,95	1	1	R0,00
13	Water management		0	47316,97	1	1	R0,00
14	2 to 3 years of maintenance and aftercare	ha	0	16560,94	1	1	R0,00
15 (A)	Specialist study			65000			R 0.00
15 (B)	Specialist study			0			R 0.00
						Sub Total 1 (Sum of items 1 to 15)	R3 318,50
						Add 6% if Sub Total 1 is ≥ R 1000	
						Add 12% if Sub Total 1 is ≤ R 1000	R398,22
1	Preliminary and General	6% of Subtotal 1			**Weighting factor 2 (Step 4.4)**		
		12% of Subtotal 1			1,05		
2	Contingency	10.0% of Subtotal 1					R331,85
						Sub Total 2 (Sub Total 1 plus sum of management and contingency)	R4 048,57
						VAT (15%)	**R607,29**
						GRAND TOTAL (Subtotal 3 plus VAT)	**R4 655,86**

21.1. Explain how the aforesaid amount was derived.

The Regulations Pertaining to the Financial Provision for Prospecting, Mining or Production Operations promulgated under section 44(aE), (aF), (aG), (aH) read with sections 24(5)(b)(ix), 24(5)(d), 24N, 24P and 24R of the National Environmental Management Act, 1998 (Act No.107 of 1998) (20 November

2015) have been considered and this is anticipated to result in an increase in the rehabilitation costs estimated using above mentioned quantum.

21.2. 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).

The Applicant has direct access to sufficient financial resources required as per the budget to enable it to conduct the proposed prospecting operation optimally in accordance with the Prospecting Work Program. The applicant has provided proof of financial ability during the application phase on the DMR SAMRAD system.

22. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

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

22.1.1. Impact on the socio-economic conditions of any directly affected person.

Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix.

Current land uses inside the prospecting area, such as existing mining areas and residue deposits / stockpiles may be temporarily impacted for the proposed sampling of the 12 areas as outlined in this report. These are however, small areas. These areas will be rehabilitated post sampling and activities and the areas will once again become available for depositing of waste material. Far areas that are not activity used for depositing where the area may be leased / used for grazing, the surface right users may have issues like leaving the gates open which poses security concerns and opening of many access roads.

The potential exists for a group of unfamiliar workers to enter the project area during the prospecting activities. This impact could potentially affect the local communities; however, the impact will be negligible as the people on site will be limited to the Applicant, contractor and geologists for the sampling phase.

The consultation process will allow directly affected parties to raise their concerns. Further to this, it must be noted that I&AP's, including directly affected parties such as landowners, have the opportunity to review and comment on this report. The results of the public consultation have been included in the final report submitted to the department for adjudication.

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

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

Mitigation measures proposed in this report include that no sample site will be located within 30 m of any identified heritage site (Figure 14-2) based on the desktop work undertaken. Should any paleontological or cultural artefacts be discovered, work at the point of discovery must stop, the location be clearly demarcated and SAHRA is contacted immediately. Work at the discovery site may only be recommenced on instruction from SAHRA.

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

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

This BAR and EMPr has been compiled in accordance with the NEMA (1998), EIA Regulations (2014, amended April 2017) and MPRDA (2002). The EAP managing the application confirms that this BAR and EMPr is being submitted for Environmental Authorisation in terms of the National Environmental

Management Act, 1998 in respect of listed activities that have been triggered by application in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (as amended). Should the DMR require any additional information, this will be provided upon request. No reasonable or feasible alternatives exist for this Prospecting Right Application and as such, motivation for no alternatives has been provided in the relevant sections above.

PART B
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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 of the EAP are provided in Section 1.1 of PART A of this document.

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 requirement to describe the aspects of the activity that are covered by the final environmental management programme is already included in PART A.

3. COMPOSITE MAP

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

Refer to Figure 14-1, Figure 14-2 and Appendix 4.

4. DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS

4.1. Determination of closure objectives.

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

- Rehabilitation of areas disturbed as a consequence of prospecting to a land capability that will support and sustain a predetermined post-closure land use;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned final land use;
- Removal of existing contaminated material from affected areas;
- Establishment of final landforms that are stable and safe in the long run;
  Establishment and implementation of measures that meet specific closure related performance objectives.

Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.

4.2. Volumes and rate of water use required for the operation.

It is unlikely that water will be required for the sampling process as outlined in this report (12 sites with 10 samples each in a 500 m radius).

4.3. Has a water use licence (WUL) has been applied for?

No, a WUL is not required. The volume of water to be used during prospecting activities will not trigger any NWA listed activities. The Department of Water and Sanitation will be consulted as a project stakeholder.

5. IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

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

Table 5-1: Mitigation measures

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
All	Planning of prospecting activities	All		N/A		
All	Consultation of affected parties	All		Stakeholder engagement will continue throughout the prospecting activities to ensure the community and landowners are kept informed and allowed to raise issues. The Applicant shall attend applicable community meetings with the affected communities / Stakeholder. Any issues raised will then be addressed through a grievance mechanism.	NEMA, Public Participation Guidelines	All phases
All	Potential construction of roads and infrastructure	Co		N/A		
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	• Vegetation clearing for prospecting sites should be kept to a minimum in order to reduce the disturbance footprint; • Compaction of soil must be avoided as far as possible, and the use of heavy machinery must be restricted in areas outside of the proposed prospecting sites to reduce the compaction of soils; • All measures should be implemented to minimize the potential of dust generation; • Local residents should be notified of any potentially noisy activities or work and these activities should be undertaken at reasonable times of the day. These works should not take place at night or on weekends; • Noise attenuation on engines must be adequate, and the noisy activities must be restricted as far as is possible to times and locations whereby the potential for noise nuisance is reduced; • Ensure proper storage of fuels;	SANS 10103, ECA Noise Regulations, NEMAQA, Dust Regulations, NWA, MPRDA, Regulations GN R527, DWAF BPG, NHRA	Throughout operation and decommissioning

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
				• On-site vehicles must be limited to approved access routes and areas on the site so as to minimize excessive environmental disturbance to the soil and vegetation on site, and to minimize disruption of traffic; • Workforce should be kept within defined boundaries and to agreed access routes; • No invasive prospecting activities to be undertaken within 500 m of a watercourse; and • Should any watercourse be affected, then the necessary water use licences should be obtained from the Department of Water and Sanitation. • Local residents (landowners and directly adjacent landowners) should be notified of any potentially noisy activities or work and these activities should be undertaken at reasonable times of the day. This work should not take place at night or on weekends; • The contractor must attempt to restrict noisy activities as far as is possible to times and locations whereby the potential for noise nuisance is reduced; • On-site vehicles must be limited to approved access routes and areas on the site so as to minimize excessive environmental disturbance to the soil and vegetation on site, and to minimize disruption of traffic; • Workforce should be kept within defined boundaries and to agreed access route; • Should any artefacts be uncovered during the Site Establishment phase, these must be handled in accordance with the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA); and • If a possible heritage site (including graves) or artefact is discovered during Site Establishment, all		

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
				operations in the vicinity of the discovery (at least 30 m buffer) should stop and a qualified specialist contracted to evaluate and recommend appropriate actions; • Any spills of hydrocarbons or fluids used during operation, must be cleaned up immediately; and • Soils in sampling areas where disturbances will be encountered must be stripped and stockpiled outside affected areas for use after completion of the sampling program.		
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	120	• Demarcation of sensitive areas in consultation with relevant specialists and ECO; • Utilise local labour if possible; • Minimise removal of vegetation as far as possible; • Identification and relocation of protected species by a qualified ecologist (and application or the relevant biodiversity permits where required); • Minimize dust generation; • Limit vehicle access; • Implement alien vegetation management; • Ongoing identification of risks and impacts; • Emergency preparedness; • Monitoring and review; and • Avoid disturbance of fauna as much as possible, especially bird nesting sites	NEMA, MPRDA, NEMBA, NEMAQA, Dust regulations, NWA, DWAF Best Practice Guideline	Throughout operation
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	120	Refer to "Site clearance (if Needed) to allow for collection of 10 samples in a 500 m radius" under Biodiversity above.		

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
Biodiversity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O, Cl	120	Refer to "Site clearance (if Needed) to allow for collection of 10 samples in a 500 m radius" under Biodiversity above.		
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	120	Refer to "Site clearance (if Needed) to allow for collection of 10 samples in a 500 m radius" under Biodiversity above.		
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	120	Refer to "Site clearance (if Needed) to allow for collection of 10 samples in a 500 m radius" under Biodiversity above.		
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
	Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	120	Refer to "Site clearance (if Needed) to allow for collection of 10 samples in a 500 m radius" under Biodiversity above.		
	Collection of surface samples from 10 points in	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
	a radius of 500 m for each of the 12 sites					
Groundwater	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
Heritage Resources	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
Noise	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.	sites" as outlined for Biodiversity.	sites" as outlined for Biodiversity.
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	• Trucks, machinery and equipment must be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks. All leaks must be cleaned up immediately using spill kits or as per the emergency response plan. For large spills a hazardous materials specialist shall be utilized; • Accidental hydrocarbon spillages must be reported immediately, and the affected soil should be removed, and rehabilitated or if this is not possible, disposed of at a suitably licenced waste disposal facility	NWA, DWAF BPG, NEMA	Throughout operation

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
Air	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.		
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.		
Socio-economic	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	120	Should any temporary employment opportunities be generated it is advised that the applicant advertise in a local newspaper.	Company Employment policy	As needed
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites" under land use below.		
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	120	Refer to "Site Access" under Land use below.		
Waste	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	120	• Waste generated on site must be recycled as far as possible. Recyclable waste must not be stored on site for excessive periods to reduce risk of environmental contamination; and • A Waste Management System must be implemented, and provide for adequate waste storage (in the form of enclosed containers) waste separation for recycling, and frequent removal of non-recyclable waste for permanent disposal at an appropriately licensed waste disposal facility. No waste material is to be disposed of on site.	DWAF Minimum requirements for waste disposal, NEMWA	Throughout operation
Soil	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	D	120	Refer to "Collection of surface samples from 10 points in a radius of 500 m from each of the 12 sites" as outlined for Biodiversity above.		

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	As per access road used and incident	• All hazardous substances (e.g., fuel, grease, oil, brake fluid, hydraulic fluid) must be handled, stored and disposed of in a safe and responsible manner so as to prevent pollution of the environment or harm to people or animals. • Appropriate measures must be implemented to prevent spillage and appropriate steps must be taken to prevent pollution in the event of a spill in a way that does not pose any danger of pollution even during times of high rainfall; • Hazardous substances must be confined to specific and secured areas, and stored at all time within bunded areas; • Adequate spill prevention and clean-up procedures should be developed and implemented during the prospecting activities; and • Should any major spills of hazardous materials take place, such should be reported in terms of the Section 30 of the NEMA.	NWA, NEMWA, DWAF Best Practice Guideline, NEMA	Throughout operation
Land Use	Site access to the proposed sampling site	O	As per applicable site existing mining access	• All employees and visitors to the site must undergo a site induction which shall include basic environmental awareness and site-specific environmental requirements; • Landowners/lawful occupiers must be notified prior to accessing properties. A date and time that is suitable to landowners/lawful occupiers and is reasonable to the applicant should be negotiated and agreed upon; • The number, identity of workers, work location and work to be done must be provided to the landowner/lawful occupier prior to going on site; • Consideration must be taken by the applicant and/or contractors when on site not to interfere with the existing land uses and practices.	NEMA, OHS and MHSA	Throughout operation

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
Land Use	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	As per applicable site existing mining operations	• Where possible, sampling sites should be located along existing access roads to reduce the requirement for additional access roads; • Any new temporary access routes to a sample site should result in minimal disturbance to existing vegetation; • Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowner. This formal agreement should additionally stipulate landowners' special conditions which would form a legally binding agreement; All farm gates must be closed immediately upon entry/exit; • Under no circumstances may the contractor damage any farm gates, fences, etc.; • On-site vehicles must be limited to approved access routes and areas on the site so as to minimize excessive environmental disturbance to the soil and vegetation on site, and to minimize disruption of traffic (where relevant); • All vehicles using public roads must be in a roadworthy condition and their loads secured. They must adhere to the speed limits and all local, provincial and national regulations with regards to road safety and transport; • All measures should be implemented to minimize the potential of dust generation; and • Workers must be easily identifiable by clothing and ID badges. Workers should carry with them, at all times a letter from the applicant stating their employment, title, role and manager contact details.	NWA, NEMWA, OHSS, MHSA	Throughout operation
Service provision: Electricity	Site access to the proposed sampling site	O	120	• Any amendments to this document must take into consideration the planned ESKOM activities and correspondence with ESKOM will be a priority should future additional activities, e.g. drilling be	NEMA, DWAF Best Practice Guideline	

Aspect	Activity	Phase	Size & Scale (m^2)	Mitigation Measures	Compliance with Standards	Time period for implementation
				located within the ESKOM expansion areas. Of importance here is the proposed UMTO substation expansion, corridors and solar plants (planned and existing), refer to Figure 5-1. • The prospecting right holder will comply with the requirements as outlined in the document "Eskom requirements for works at or near Eskom infrastructure and servitudes" in Appendix 8.		
Service provision: Electricity	Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	120	The prospecting right holder will comply with the requirements as outlined in the document "Eskom requirements for works at or near Eskom infrastructure and servitudes" in Appendix 8.	Eskom requirements	As needed
All	Rehabilitation of disturbed sites	Re	120	• Restoration and rehabilitation of disturbed areas must be implemented as soon as prospecting activities are completed; • Sites must be restored to the original condition with vegetation cover (where applicable) equalling the surrounding vegetation cover; • All debris and contaminated soils must be removed and suitably disposed of; • Contours and natural surrounding must be reformed; • Natural drainage patterns must be restored; • Temporary access routes/roads must be suitably rehabilitated; and • Sites must be monitored by the ECO (including relevant specialist's inputs if, necessary) for adequate rehabilitation until the desired rehabilitation objectives have been achieved.	MPRDA, Rehab Plan, NEMA	Rehabilitation

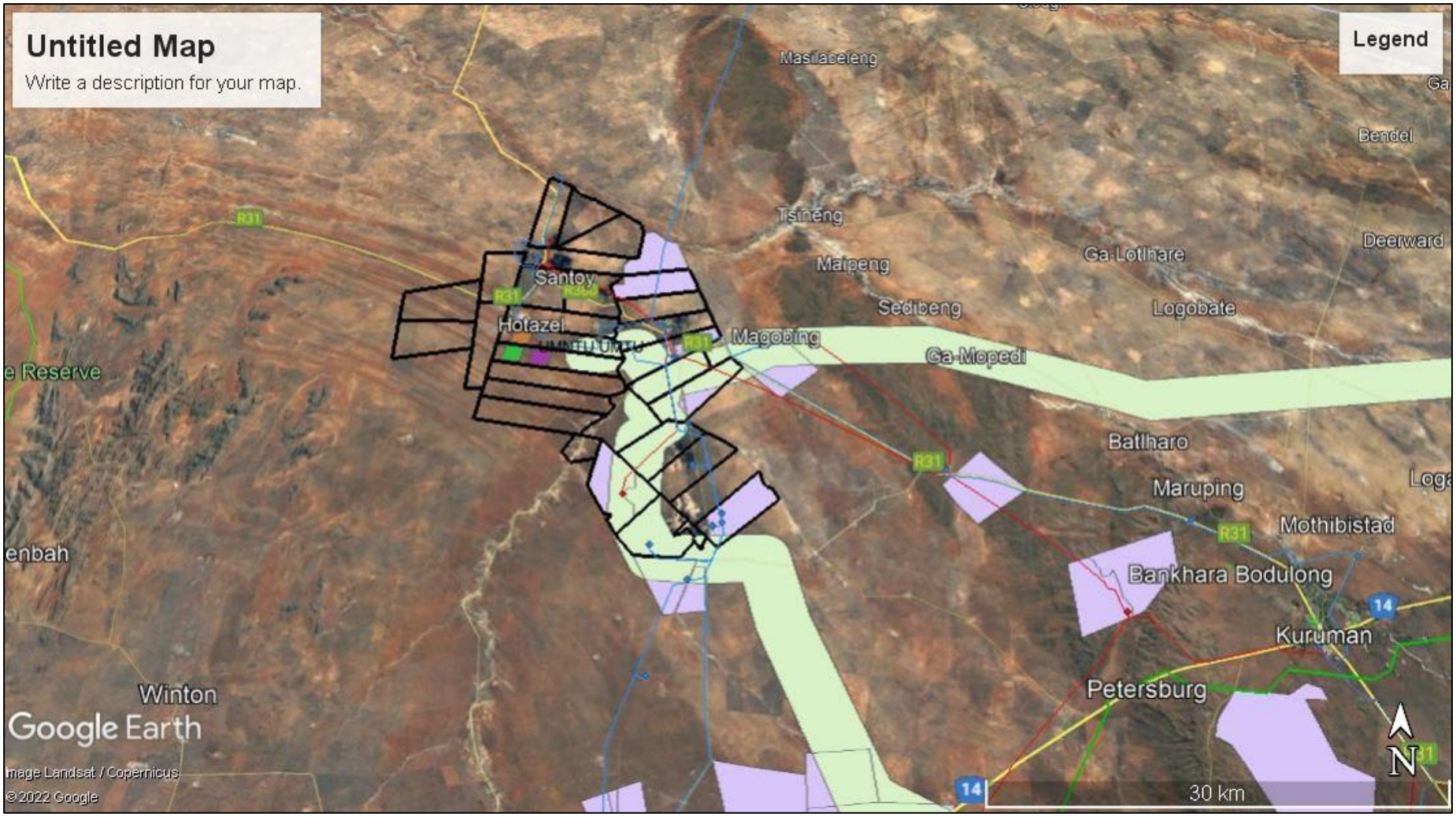

Figure 5-1: ESKOM Umto Substation, Solar Plants (Potential and existing) and corridors[38]

[38] As per Email from Mr John Geeringh dated 26 August 2022

6. IMPACT MANAGEMENT ACTIONS AND OUTCOMES

Table 6-1: Summary of Impact Management Actions and Outcomes

Activity	Phase	Impact	Aspects Affected	Mitigation Type	Standard to be Achieved
Planning of prospecting activities	All	No impacts are foreseen due to the non-invasive nature of the planning phase	All	N/A	N/A
Consultation with affected parties	All	N/A	All	N/A	N/A
Potential construction of roads and infrastructure	Co	None foreseen as existing access roads will be used to access the proposed sampling areas	All	N/A	N/A
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Temporary disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	Biodiversity	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	Loss of CBA1 and ESA and other sections of area classed as other natural Areas	Biodiversity	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA

Activity	Phase	Impact	Aspects Affected	Mitigation Type	Standard to be Achieved
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Displacement of Faunal community due to temporary habitat loss, disturbance (noise, dust, and vibration) and/or direct mortalities	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Continued disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O, Cl	Encroachment by alien invasive plant species	Biodiversity	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	Biodiversity	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	NEMA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	Biodiversity	Avoid and control through implementation of EMP mitigation measures (e.g., speed limit enforcement, vehicle maintenance)	NEMA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA

Activity	Phase	Impact	Aspects Affected	Mitigation Type	Standard to be Achieved
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Further impacts due to the spread and/or establishment of alien and/or invasive species	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	O	Further impacts due to the spread and/or establishment of alien and/or invasive species	Biodiversity	Avoid and control through implementation of EMP mitigation measures (e.g., speed limit enforcement, vehicle maintenance)	NEMA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbances such as dust, vibrations poaching and noise.	Biodiversity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Degradation of aquifers	Groundwater	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Impacts of existing groundwater users	Groundwater	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Impacts on potential burial grounds and graves	Heritage Resources	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Impacts on archaeological resources	Heritage Resources	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Noise nuisance	Noise	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines

Activity	Phase	Impact	Aspects Affected	Mitigation Type	Standard to be Achieved
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Pollution of soil	Soil	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Air Quality	Air	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	Deterioration and damage to existing access roads and tracks	Air	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	Potential job creation	Socio- economic	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	Safety and security to existing landowners and lawful occupier	Socio- economic	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	Interference with existing land uses	Socio- economic	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O, D	Generation and disposal of waste	Waste	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)	DWAF minimum requirement for waste disposal
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	D	Erosion due to improper rehabilitation	Soil	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a	O	Potential soil pollution from hydrocarbons spills from	Soil	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust

Activity	Phase	Impact	Aspects Affected	Mitigation Type	Standard to be Achieved
radius of 500 m for each of the 12 sites		vehicles used to access the stie			regulations, NWA, DWAF best Practice Guidelines
Site access to the proposed sampling site	O	Potential impact on the disposal of waste on the sampling area by the operational mining company	Land Use	Avoidance and control through preventative measures (e.g. communication with landowners, site access control) Remedy through application of mitigation measures in EMP	NEMA, MPRDA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Potential impact on the disposal of waste on the sampling area by the operational mining company	Land Use	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Site access to the proposed sampling site	O	Potential overlap with existing ESKOM infrastructure or future planned expansion.	Service provision: Electricity	Avoidance and control through preventative measures (e.g. communication with landowners, site access control) Remedy through application of mitigation measures in EMP	NEMA, MPRDA, NEMBA, CARA, Threatened or Protected Species (TOPS) regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	O	Potential overlap with existing ESKOM infrastructure or future planned expansion.	Service provision: Electricity	Control through implementation of EMPR mitigation measures	SANS10103, ECA, Noise Regulations, NEMAQA, Dust regulations, NWA, DWAF best Practice Guidelines
Rehabilitation of disturbed sites	Re	Rehabilitation of sampling area to predetermined land use	All	Control through implementation of EMPR mitigation measures	MPRDA In accordance with Rehabilitation plan

7. FINANCIAL PROVISION

7.1. Determination of the amount of Financial Provision.

On the 20th of November 2015 the Minister promulgated the Financial Provisioning Regulations under the NEMA, which will come into effect in 2021. The regulations aim to regulate the determine and making of financial provision as contemplated in the NEMA for the costs associated with the undertaking of management, rehabilitation and remediation of environmental impacts from prospecting, prospecting, mining or production operations through the lifespan of such operations and latent or residual environmental impacts that may become known in the future. These regulations provide for, *inter alia*:

- Determination of financial provision: An applicant or holder of a right or permit must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of prospecting, prospecting, mining or production operations, as contemplated in the Act and to the satisfaction of the Minister responsible for mineral resources.
- Scope of the financial provision: Rehabilitation and remediation; decommissioning and closure activities at the end of operations; and remediation and management of latent or residual impacts.
- Regulation 6: Method for determining financial provision – An applicant must determine the financial provision through a detailed itemisation of all activities and costs, calculated based on the actual costs of implementation of the measures required for:
    - Annual rehabilitation – annual rehabilitation plan
    - Final rehabilitation, decommission and closure at end of life of operations – rehabilitation, decommissioning and closure plan; and
    - Remediation of latent defects.
- Regulation 10: An applicant must:
    - Ensure that a determination is made of the financial provision and the plans contemplated in regulation 6 are submitted as part of the information submitted for consideration by the Minister responsible for mineral resources of an application for environmental authorisation, the associated environmental management programme and the associated right or permit in terms of the MPRDA; and
    - Provide proof of payment or arrangements to provide the financial provision prior to commencing with any prospecting, prospecting, mining or production operations.
- Regulation 11: Requires annual review, assessment and adjustment of the financial provision. The review of the adequacy of the financial provision including the proof of payment must be independently audited (annually) and included in the audit of the EMPR as required by the EIA regulations.

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

Considering the relatively limited impact of the proposed prospecting activities, the closure objectives are aimed at re-instating the landform, land use and vegetation units to the same as before prospecting operations take place unless a specific, reasonable alternate land use is requested by the landowner. As such, the intended end use for the disturbed prospecting areas and the closure objectives will be defined in consultation with the relevant landowner. Proof of such consultation will be submitted together with the Application for Closure Certificate. The overall aim of the rehabilitation plan is to rehabilitate the environment to a condition as close as possible to that which existed prior to prospecting. This shall be achieved with a number of specific objectives.

i. **Making the area safe**. i.e., Decommission prospecting activities so as to ensure that the environment is safe for people and animals. This entails refilling excavations, sealing boreholes, etc.
ii. **Recreating a free draining landform**. This entails earthworks infilling, reshaping, levelling, etc. to recreate as close as possible the original topography and to ensure a free draining landscape.
iii. **Re-vegetation.** This involves either reseeding or allowing natural succession depending on the area, climate etc.

iv. **Storm water management and erosion control**. Management of stormwater and prevention of erosion during rehabilitation. E.g., cut off drains, berms etc. and erosion control where required.
v. **Verification of rehabilitation success**. Entails monitoring of rehabilitation.
vi. **Successful closure.** Obtain closure certificate.

8. CONFIRM SPECIFICALLY THAT THE ENVIRONMENTAL OBJECTIVES IN RELATION TO CLOSURE HAVE BEEN CONSULTED WITH LANDOWNER AND INTERESTED AND AFFECTED PARTIES.

The environmental objectives in relation to closure will be consulted with the farmers and affected parties. It will be explained that should the prospecting yield negative results, then the end use for area will revert to its pre-prospecting land use (minutes to be incorporated on the final report). The end-use of the area will therefore not be changed by the prospecting operations.
As such, the purpose of the PPP and stakeholder engagement process is to:

- Introduce the proposed project;
- Explain the environmental authorisations required;
- Explain the environmental studies already completed and yet to be undertaken (where applicable);
- Determine and record issues, concerns, suggestions, and objections to the project;
- Provide opportunity for input and gathering of local knowledge;
- Establish and formalise lines of communication between the I&AP's and the project team;
- Identify all significant issues for the project; and
- Identify possible mitigation measures or environmental management plans to minimise and/or prevent negative environmental impacts and maximize and/or promote positive environmental impacts associated with the project.

9. PROVIDE A REHABILITATION PLAN THAT DESCRIBES AND SHOWS THE SCALE AND AERIAL EXTENT OF THE MAIN PROSPECTING ACTIVITIES, INCLUDING THE ANTICIPATED PROSPECTING AREA AT THE TIME OF CLOSURE.

The following main strategies will be implemented:

- Rehabilitation of areas disturbed as a consequence of prospecting to a land capability that will support and sustain a predetermined post-closure land use or the current land use by the operational mining company as the sites are located on residue deposits/ stockpiles;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned final land use or the current land use by the operational mining company as the sites are located on residue deposits/ stockpiles;
- Removal of existing contaminated material from affected areas;
- Establishment of final landforms that are stable and safe in the long run or the current land use by the operational mining company as the sites are located on residue deposits/ stockpiles;
- Establishment and implementation of measures that meet specific closure related performance objectives.

9.1. Integrated rehabilitation and closure plan

The main aim in developing this rehabilitation plan is to mitigate the impacts caused by the prospecting activities and to restore land back to a satisfactory standard as agreed with the operational mine. It is best practice to develop the rehabilitation plan as early as possible so as to ensure the optimal management of rehabilitation issues that may arise. It is important that the project's closure plan is defined and understood from before starting the process and is complementary to the rehabilitation goals. Rehabilitation and closure objectives need to be tailored to the project at hand and be aligned with the EMPR. The overall rehabilitation objectives for this project are as follows:

- Maintain and minimise impacts to the ecosystem within the prospecting area;
- Re-establishment of the pre-developed land capability to allow for a suitable post-prospecting land use;
- Prevent soil, surface water and groundwater contamination;

- Comply with the relevant local and national regulatory requirements; and
- Maintain and monitor the rehabilitated areas.

Successful rehabilitation must be sustainable, and requires an understanding of the basic baseline environment, as well as project management to ensure that the rehabilitation program is a success.

It is noted that a separate application for environmental authorisation must be submitted for closure in accordance with EIA Regulations, 2014 Listing Notice 1 Activity 22:
The decommissioning of any activity requiring

i. A closure certificate in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or
ii. A prospecting right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure.

9.2. Phase 1: Making safe

The areas disturbed by the surface sampling from the residue deposits / stockpiles will be made safe by ensuring that there are no pits / holes that could pose a danger to people walking on top of these or to machinery traversing the stockpiles as part of the daily operations of the operating mine.

Should drilling be done in future (and after approval is received from the DMR in terms of NEMA requirements), rehabilitations of the boreholes will take place in line with the DWAF (2008) Best Practice Guideline A6: Water Management for Underground Mines: all prospecting boreholes that will not be required for later monitoring or other useful purposes should be plugged and sealed with cement to prevent possible cross flow and contamination between aquifers. Cement and liquid concrete are hazardous to the natural environment on account of the very high pH of the material, and the chemicals contained therein. As a result, the contractor shall ensure that:

- Concrete shall not be mixed directly on the ground;
- The visible remains of concrete, either solid, or from washings, shall be physically removed immediately and disposed of as waste, (Washing of visible signs into the ground is not acceptable); and
- All excess aggregate shall also be removed.

9.3. Phase 2: Landform design, erosion control and revegetation

For the surface sampling phase landform design rehabilitation will be done to the satisfaction of the site manager of the operational mine to ensure safety op people / machinery and equipment. As the proposed sites are operational mines erosion control will be address by making the sampling sites safe, no rehabilitation will take place unless it is an old defunct stockpile / deposit.

For the potential drilling phase (after approval has been sourced and received), landform, erosion control and re-vegetation is an important part of the rehabilitation process. Landform and land use are closely interrelated, and the landform should be returned as closely as possible to the original landform or as agreed with the operational mine. Community expectations, compatibility with local land use practices and regional infrastructure, or the need to replace natural ecosystems and faunal habitats all support returning the land as closely as possible to its original appearance and productive capacity. This requires the following:

- Shape, level and de-compact the final landscape after removing all the project infrastructure (if any), dress with topsoil and, where necessary, vegetate with indigenous species. Commission specialists to assist in planning re-vegetation and the management of environmental impact, as required.
- Remove access roads (if any) with no beneficial re-use potential by deep ripping, shaping and levelling after the removal and disposal of any culverts, drains, ditches and/or other infrastructure. Natural drainage patterns are to be reinstated as closely as possible.
- Shape all channels and drains to smooth slopes and integrate into the natural drainage pattern.
- Construct contour banks and energy dissipating structures as necessary to protect disturbed areas from erosion prior to stabilisation.

- Promote re-vegetation through the encouragement of the natural process of secondary succession.
- Natural re-vegetation is dependent on de-compaction of subsoils and adequate replacement of the accumulated reserves of topsoil (for example, over the sampling sites), so as to encourage the establishment of pioneer vegetation.
- Remove alien and/or exotic vegetation.
- Undertake a seeding programme only where necessary, and as agreed with the re-vegetation specialist

9.4. Phase 3: Monitoring and maintenance

As the surface sites are residue deposits / stockpiles it will be difficult to show that rehabilitation was done if the stockpile / deposit is in an operational phase due to continued depositing by the operational mine on the stockpiles / deposits. It is this proposed that immediately after taking the samples that photographic evidence of the sampling site be taken to show that it is safe and does not pose a danger to human / machinery / equipment. If the sampling site was an old defunct deposit / stockpile area, vegetation establishment will need to be monitored one year post sampling.

For the potential drilling phase (after approval has been sourced and received), the post-operational monitoring and management period following decommissioning of prospecting activities must be implemented by a suitable qualified independent party for a minimum of one (1) year unless otherwise specified by the competent authority. The monitoring activities during this period will include but not be limited to:

- Biodiversity monitoring; and
- Re-vegetation of disturbed areas where required.

Provision must be made to monitor any unforeseen impact that may arise as a result of the proposed prospecting activities and incorporated into post closure monitoring and management.

9.5. Post-closure monitoring and maintenance

For the surface sampling phase as applicable to this report no monitoring will be done on active operational residue stockpiles / deposits. If sampling was done on old defunct deposit / stockpile area, vegetation establishment will need to be monitored one year post sampling.

For the potential drilling phase (after approval has been sourced and received), prior to decommissioning and rehabilitation activities, a monitoring programme shall be developed and submitted to the relevant authority for approval, as a part of the Final Rehabilitation Plan. It is recommended that the post-closure monitoring include the following:

- Confirmation that any waste, wastewater or other pollutants that is generated as a result of decommissioning will be managed appropriately, as per the detailed requirements set out in the Final Rehabilitation Plan,
- Confirmation that all de-contaminated sites are free of residual pollution after decommissioning.
- Confirmation that acceptable cover has been achieved in areas where natural vegetation is being re-established. ‘Acceptable cover’ means re-establishment of pioneer grass communities over the disturbed areas at a density similar to surrounding undisturbed areas, non-eroding and free of invasive alien plants.

Annual environmental reports will be submitted to the Competent Authority and other relevant Departments for at least one-year post-decommissioning. The frequency and duration of this reporting period may be increased to include longer term monitoring, at intervals to be agreed with the Designated Authority. The monitoring reports shall include a list of any remedial action necessary to ensure that infrastructure that has not been removed remains safe and pollution free and that rehabilitation of project sites are in a stable, weed and free condition.

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

The rehabilitation plan is compatible with the closure objectives in that is seeks to ensure that negative impacts on the receiving environment that could not be prevented or mitigated during prospecting are rehabilitated. The appropriate disposal of waste will ensure that land is usable, in alignment with surrounding land uses and that no hazardous materials are left on site post-prospecting.

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

Operational rehabilitation has been catered for in the Budget lodged with the application in the Prospecting Work Programme. In terms of decommissioning rehabilitation (or the so-called Rehabilitation Quantum the preliminary estimate of the rehabilitation cost is (inclusive of contingencies and VAT): **R 4 655,86**.

9.7. Confirm that the financial provision will be provided as determined.

The Budget has been prepared by the applicant as part of the Prospecting Work Programme and that includes a provision for Rehabilitation in the prospecting budget. The applicant confirms herewith that the amount can be (and will be) provided from operating expenditure. The quantum must be approved by the DMR after which the applicant will provide for the quantum by way of bank guarantee.

10.MECHANISMS FOR MONITORING COMPLIANCE WITH AND PERFORMANCE ASSESSMENT AGAINST THE ENVIRONMENTAL MANAGEMENT PROGRAMME AND REPORTING THEREON, INCLUDING

a) Monitoring of Impact Management Actions
b) Monitoring and reporting frequency
c) Responsible persons
d) Time period for implementing impact management actions
e) Mechanism for monitoring compliance

Table 10-1: Mechanisms for monitoring compliance

Source activity monitoring and reporting	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities	Frequency and time periods for implementing impact management actions
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Temporary disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	N/A	N/A	N/A
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	Vegetation establishment	Application, Contractor, Specialists	1 year after sampling took place
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Destruction of and fragmentation of portions of vegetation community (note that most of the sampling activities (12 sites) will take place on previously disturbed areas)	Vegetation establishment	Application, Contractor, Specialists	1 year after sampling took place
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Loss of CBA1 and ESA and other sections of area classed as other natural Areas	Vegetation species removed	Application, Contractor, Specialists	Before sampling commence
N/A	Displacement of Faunal community due to temporary habitat loss, disturbance (noise,	N/A	N/A	N/A

Source activity monitoring and reporting	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities	Frequency and time periods for implementing impact management actions
	dust, and vibration) and/or direct mortalities			
N/A	Continued disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles	N/A	N/A	N/A
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Encroachment by alien invasive plant species	Vegetation establishment	Application, Contractor, Specialists	1 year after sampling took place
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	Fauna species	Application, Contractor, Specialists	Before sampling commence
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Disturbance and mortalities of reptiles and other herpetofauna due to rock and soil sampling	See above	See above	See above
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	See above	See above	See above
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Ongoing displacement, direct mortalities and disturbance of faunal community due to habitat loss and disturbance because of sampling and drilling.	See above	See above	See above
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Further impacts due to the spread and/or establishment of alien and/or invasive species	Vegetation establishment	Application, Contractor, Specialists	1 year after sampling took place
Site clearance (if needed) to allow for collection of 10 samples in a 500 m radius	Further impacts due to the spread and/or establishment of alien and/or invasive species	Vegetation establishment	Application, Contractor, Specialists	1 year after sampling took place
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Displacement, direct mortalities and disturbance of faunal community due to habitat loss	See above	See above	See above

Source activity monitoring and reporting	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities	Frequency and time periods for implementing impact management actions
	and disturbances such as dust, vibrations poaching and noise.			
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Degradation of aquifers	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts of existing groundwater users	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts on potential burial grounds and graves	Presence at sampling site	Application, Contractor, Specialists	As needed
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Impacts on archaeological resources	Presence at sampling site	Application, Contractor, Specialists	As needed
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Noise nuisance	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Pollution of soil	Identification of spills and removal of contaminated soils and disposal to suitable waste landfill site	Application, Contractor, Specialists	As needed
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Air Quality	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Deterioration and damage to existing access roads and tracks	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential job creation	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling

Source activity monitoring and reporting	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities	Frequency and time periods for implementing impact management actions
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Safety and security to existing landowners and lawful occupier	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Interference with existing land uses	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Generation and disposal of waste	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Erosion due to improper rehabilitation	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential soil pollution from hydrocarbons spills from vehicles used to access the stie	Identification of spills and removal of contaminated soils and disposal to suitable waste landfill site	Application, Contractor, Specialists	As needed
Site access to the proposed sampling site	Potential impact on the disposal of waste on the sampling area by the operational mining company	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential impact on the disposal of waste on the sampling area by the operational mining company	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Site access to the proposed sampling site	Potential overlap with existing ESKOM infrastructure or future planned expansion.	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Collection of surface samples from 10 points in a radius of 500 m for each of the 12 sites	Potential overlap with existing ESKOM infrastructure or future planned expansion.	Not identified for surface sampling	Not identified for surface sampling	Not identified for surface sampling
Rehabilitation of disturbed sites	Rehabilitation of sampling area to predetermined land use	Vegetation establishment	Application, Contractor, Specialists	1 year after sampling took place

11. INDICATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT/ ENVIRONMENTAL AUDIT REPORT.

Regular monitoring of all the environmental management procedures and mitigation measures shall be carried out by Salene in order to ensure that the provisions of this EMPr are adhered to. Formal monitoring and performance assessment of the EMP will be undertaken on an annual basis.

12. ENVIRONMENTAL AWARENESS PLAN

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

The following Environmental Awareness Training will be implemented by Salene Manganese in order to inform employees and contractors of the environmental risk that may result from their work, or the risk of their interaction with the sensitive environment. The training will be conducted as part of the induction process for all new employees (including contractors) that will perform work in terms of the proposed activities. Proof of all training provided must be kept on-site. The Environmental Awareness Training will, as a minimum cover the following topics within Table 12-1

Table 12-1: Environmental Awareness Plan

Air Quality	Activities that may result or mitigate impact on air quality; speeding on roads, the requirements for dust suppression, etc. Negative impacts on the receiving environment if mitigation measures are not implemented.
Surface and groundwater	Risks to surface and groundwater, e.g., fuel and chemical handling and further risks of erosion or damage to riparian vegetation. How incidents should be reported, and emergency requirements. The importance to re-use water and to prevent spillages.
Cultural Heritage	To respect all cultures and believes. How to report any sightings of heritage importance as identified during operation activities (e.g., fossils).
Fauna	Overview of the fauna found on/around site and the uniqueness thereof. Mitigation measures that all contractors and employees need to abide by. No contractor or personnel allowed to catch or kill any species, and how any sightings should be reported if further actions are required (e.g., to catch and release).
Flora	Overview of the flora diversity on site, and the rare and endangered nature thereof. Measures taken by the company to protect species. No contractor or personnel allowed to remove, harvest or destroy any flora species unless clearly instructed based on the operational plans.
Waste management	Measures to avoid waste generation and to participate in waste minimisation/reduction.
Traffic strategies.	To stay on designated roads and not create new roads on areas that will not be used for prospecting purposes. To be aware of the fauna species and to be on the lookout and avoid collisions.
Emergency Preparedness and Response	How to report any emergency or incident. Incident and emergency reporting requirements.
General rules and conduct	Respect for the sensitive environment. Do not litter. Respect for each other and for different cultures. Safety and health requirements

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

All employees must be provided with environmental awareness training to inform them of any environmental risks which may result from their work and the manner in which the risks must be dealt with in order to avoid pollution or the degradation of the environment. Employees should be provided with environmental awareness training before prospecting operations start. All new employees should be provided with environmental awareness training. Induction courses will be provided to all employees by a reputable trainer.

13. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

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

All potential risks have been identified within this document and are to be communicated to all contractors and all contractors and is indicated in the EMPr which will be available to all staff. Environmental training needs for each section should be identified and addressed to ensure environmental management is part of day-to-day operations. The environmental risk responsibilities guide the training requirements of each individual. Environmental training recommended for the different levels of management guide the training needs identification process. This is a minimum guideline and any additional training can be added where section specific issues or high-risk items require training and awareness. It is the responsibility of the line manager to ensure environmental training needs for individual staff members are identified, agreed to, facilitated and tracked.

An environmental audit report will be submitted annually as per DMR requirements.

The financial provision will be updated on an annual basis and submitted to the DMR.

14. 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 of the environmental assessment practitioner: Christina Petronella Erasmus

Name of company: Prescali Environmental Consultants (Pty) Ltd

Date: 10 October 2022

-END-

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16. APPENDICES

Appendix 1: Qualifications of the EAP
Appendix 2: Experience of the EAP
Appendix 3: Locality Map

- Locality map at a scale not smaller than 1:250000
- Proposed location of prospecting areas with 500 m radius

Appendix 4: Final Site map
Appendix 5: Terrestrial biodiversity Flora species list
Appendix 6: Bird species list
Appendix 7: Public Participation Process

Appendix 7. 1:Issues and Response Report
Appendix 7. 2: Site Notices / Background Information Documents / Newspaper Advert
Appendix 7. 3: Proof of consultation:

- IAP Notification (Post / Fax / Email / Hand delivered Notifications)
- Draft Basic Assessment distribution / Open day meeting invitation and confirmation

Appendix 7. 4: Formal letters or Registration as I&AP received

Appendix 7. 5: Meetings
Appendix 8: Eskom Requirements

Appendix 1: Qualifications

To protect Personal Information this information will only be provided to the DMRE

Appendix 2: Experience

To protect Personal Information this information will only be provided to the DMRE

Appendix 3: Locality maps

Appendix 4: Site map

Appendix 5: Terrestrial biodiversity Flora species list

Plant species list[37]

Family	Species	IUCN	Diagnostic	Ecology
Acanthaceae	*Blepharis marginata*	LC	herb; dwarf shrub;	Indigenous; Endemic
Acanthaceae	*Blepharis integrifolia*	LC	herb;	Indigenous
Acanthaceae	*Barleria rigida*	LC	dwarf shrub; shrub;	Indigenous
Acanthaceae	*Justicia australis*			Indigenous
Acanthaceae	*Hypoestes forskaolii*	LC	herb;	Indigenous
Acanthaceae	*Barleria irritans*	LC	herb; dwarf shrub;	Indigenous; Endemic
Acanthaceae	*Glossochilus burchellii*	LC	herb;	Indigenous
Acanthaceae	*Blepharis sp.*			
Acanthaceae	*Justicia divaricata*			Indigenous
Acanthaceae	*Justicia puberula*	LC	herb; dwarf shrub;	Indigenous; Endemic
Acanthaceae	*Barleria rigida*			Indigenous
Aizoaceae	*Plinthus karooicus*	LC	dwarf shrub;	Indigenous
Aizoaceae	*Ruschia sp.*		succulent;	
Aizoaceae	*Plinthus sericeus*	LC	dwarf shrub;	Indigenous
Aizoaceae	*Trianthema parvifolia*	LC	succulent; herb;	Indigenous
Aizoaceae	*Tetragonia calycina*	LC	succulent; dwarf shrub;	Indigenous
Aizoaceae	*Galenia meziana*	LC	dwarf shrub;	Indigenous
Amaranthaceae	*Atriplex semibaccata*		dwarf shrub;	Not indigenous; Naturalised; Invasive
Amaranthaceae	*Sericorema sericea*	LC	herb;	Indigenous
Amaranthaceae	*Cyphocarpa angustifolia*	LC	herb;	Indigenous
Amaranthaceae	*Hermbstaedtia fleckii*	LC	herb;	Indigenous
Amaranthaceae	*Sericorema remotiflora*	LC	herb;	Indigenous
Amaranthaceae	*Alternanthera pungens*		herb;	Not indigenous; Naturalised
Amaranthaceae	*Gomphrena celosioides*		herb;	Not indigenous; Naturalised
Amaranthaceae	*Atriplex vestita*	LC	shrub;	Indigenous
Amaranthaceae	*Pupalia lappacea*	LC	herb;	Indigenous
Amaranthaceae	*Salsola kali*		herb;	Not indigenous; Naturalised; Invasive
Amaranthaceae	*Dysphania ambrosioides*			Not indigenous; Naturalised; Invasive
Amaranthaceae	*Salsola rabieana*	LC	dwarf shrub; shrub;	Indigenous
Amaranthaceae	*Hermbstaedtia odorata*	NE	herb;	Indigenous
Amaranthaceae	*Salsola patentipilosa*	LC	dwarf shrub;	Indigenous; Endemic
Amaranthaceae	*Halopeplis amplexicaulis*		herb;	Not indigenous; Naturalised
Amaranthaceae	*Dysphania carinata*		herb;	Not indigenous; Naturalised; Invasive
Amaryllidaceae	*Haemanthus humilis*	LC	geophyte;	Indigenous; Endemic
Amaryllidaceae	*Nerine sp.*			
Anacardiaceae	*Searsia ciliata*	LC	shrub;	Indigenous
Anacardiaceae	*Searsia lancea*	LC	shrub; tree;	Indigenous
Anacardiaceae	*Searsia tridactyla*	LC	tree; shrub;	Indigenous; Endemic
Anacardiaceae	*Searsia dregeana*	LC	shrub;	Indigenous
Anacardiaceae	*Searsia burchellii*	LC	shrub; tree;	Indigenous
Anacardiaceae	*Searsia erosa*	LC	shrub;	Indigenous
Anacardiaceae	*Searsia tenuinervis*	LC	tree; shrub;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Apiaceae	*Deverra sp.*			
Apiaceae	*Deverra burchellii*	LC	shrub;	Indigenous
Apiaceae	*Berula thunbergii*	LC	hydrophyte; herb;	Indigenous
Apocynaceae	*Raphionacme velutina*	LC	succulent; geophyte; herb;	Indigenous
Apocynaceae	*Orthanthera jasminiflora*	LC	creeper;	Indigenous
Apocynaceae	*Gomphocarpus tomentosus*	LC	herb; shrub;	Indigenous
Apocynaceae	*Microloma armatum*	LC	dwarf shrub; shrub;	Indigenous
Apocynaceae	*Pergularia daemia*	LC	climber;	Indigenous
Apocynaceae	*Fockea angustifolia*	LC	succulent; climber;	Indigenous
Asparagaceae	*Asparagus laricinus*	LC	shrub;	Indigenous
Asparagaceae	*Asparagus suaveolens*	LC	shrub;	Indigenous
Asparagaceae	*Asparagus sp.*			
Asparagaceae	*Asparagus exuvialis*	NE	shrub;	Indigenous
Asparagaceae	*Asparagus retrofractus*	LC	scrambler; shrub;	Indigenous
Asparagaceae	*Asparagus nelsii*	LC	shrub;	Indigenous
Asteraceae	*Oedera humilis*		shrub;	Indigenous
Asteraceae	*Geigeria filifolia*	LC	herb;	Indigenous
Asteraceae	*Dicoma schinzii*	LC	herb;	Indigenous
Asteraceae	*Hirpicium echinus*	LC	herb;	Indigenous
Asteraceae	*Pseudognaphalium luteoalbum*	LC	herb;	Cryptogenic
Asteraceae	*Laggera decurrens*	LC	herb;	Indigenous
Asteraceae	*Osteospermum muricatum*	LC	herb;	Indigenous
Asteraceae	*Parthenium sp.*			
Asteraceae	*Nolletia annetjieae*	LC		Indigenous
Asteraceae	*Dicoma capensis*	LC	herb;	Indigenous
Asteraceae	*Berkheya ferox*	LC	shrub;	Indigenous
Asteraceae	*Garuleum schinzii*			Indigenous
Asteraceae	*Cotula vulgaris*	LC	tenagophyte; herb;	Indigenous; Endemic
Asteraceae	*Pentzia calcarea*	LC	suffrutex; shrub;	Indigenous
Asteraceae	*Helichrysum cerastioides*	LC	herb;	Indigenous
Asteraceae	*Pulicaria scabra*	LC	herb;	Indigenous
Asteraceae	*Senecio inaequidens*	LC	herb;	Indigenous
Asteraceae	*Dicoma macrocephala*	LC	herb;	Indigenous
Asteraceae	*Erlangea misera*	LC	herb;	Indigenous
Asteraceae	*Nolletia ciliaris*	LC	suffrutex;	Indigenous
Asteraceae	*Geigeria brevifolia*	LC	shrub;	Indigenous
Asteraceae	*Felicia namaquana*	LC	herb;	Indigenous
Asteraceae	*Felicia fascicularis*	LC	shrub;	Indigenous
Asteraceae	*Eriocephalus ericoides*	LC	shrub;	Indigenous; Endemic
Asteraceae	*Tarchonanthus obovatus*	LC	shrub; tree;	Indigenous; Endemic
Asteraceae	*Arctotis leiocarpa*	LC	herb;	Indigenous
Asteraceae	*Dicoma kurumanii*	LC	dwarf shrub;	Indigenous; Endemic
Asteraceae	*Tarchonanthus camphoratus*	LC	shrub; tree;	Indigenous
Asteraceae	*Senecio arenarius*	LC	herb;	Indigenous
Asteraceae	*Symphyotrichum squamatum*			Not indigenous; Naturalised; Invasive
Asteraceae	*Gazania krebsiana*	LC	herb;	Indigenous
Asteraceae	*Geigeria ornativa*	LC	herb;	Indigenous
Asteraceae	*Kleinia longiflora*	LC	succulent; shrub;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Asteraceae	*Helichrysum zeyheri*	LC	dwarf shrub; shrub;	Indigenous
Asteraceae	*Amellus tridactylus*	LC	herb;	Indigenous
Asteraceae	*Euryops subcarnosus*	LC	dwarf shrub; shrub;	Indigenous
Asteraceae	*Verbesina encelioides*		herb;	Not indigenous; Naturalised; Invasive
Asteraceae	*Dimorphotheca zeyheri*	LC	herb;	Indigenous
Asteraceae	*Pegolettia retrofracta*	LC	dwarf shrub;	Indigenous
Aytoniaceae	*Plagiochasma rupestre*		bryophyte;	Indigenous
Bignoniaceae	*Rhigozum obovatum*	LC	shrub; tree;	Indigenous
Bignoniaceae	*Rhigozum brevispinosum*	LC	shrub;	Indigenous
Bignoniaceae	*Rhigozum trichotomum*	LC	shrub;	Indigenous
Boraginaceae	*Ehretia alba*	LC	shrub;	Indigenous
Boraginaceae	*Heliotropium nelsonii*	LC	herb;	Indigenous
Boraginaceae	*Heliotropium ciliatum*	LC	herb;	Indigenous
Boraginaceae	*Heliotropium strigosum*	LC	herb;	Indigenous
Campanulaceae	*Wahlenbergia androsacea*	LC	herb;	Indigenous
Capparaceae	*Cadaba aphylla*	LC	tree; shrub;	Indigenous
Capparaceae	*Boscia albitrunca*	LC	shrub; tree;	Indigenous
Caryophyllaceae	*Pollichia campestris*	LC	herb;	Indigenous
Caryophyllaceae	*Spergularia media*		herb;	Not indigenous; Naturalised
Celastraceae	*Putterlickia saxatilis*	LC	shrub;	Indigenous; Endemic
Celastraceae	*Gymnosporia buxifolia*	LC	shrub; tree;	Indigenous
Cleomaceae	*Cleome angustifolia*			Indigenous
Cleomaceae	*Cleome rubella*	LC	herb;	Indigenous
Cleomaceae	*Cleome gynandra*	LC	herb;	Indigenous
Cleomaceae	*Cleome monophylla*	LC	herb;	Indigenous
Cleomaceae	*Cleome angustifolia*	LC	herb;	Indigenous
Colchicaceae	*Ornithoglossum vulgare*	LC	geophyte;	Indigenous
Combretaceae	*Terminalia sericea*	LC	tree;	Indigenous
Commelinaceae	*Commelina africana*	LC	herb;	Indigenous
Commelinaceae	*Commelina livingstonii*	LC	herb;	Indigenous
Convolvulaceae	*Ipomoea obscura*	LC	herb;	Indigenous
Convolvulaceae	*Ipomoea hackeliana*	LC	herb;	Indigenous
Convolvulaceae	*Merremia verecunda*	LC	herb;	Indigenous
Convolvulaceae	*Ipomoea bolusiana*	LC	succulent; herb; dwarf shrub;	Indigenous
Convolvulaceae	*Xenostegia tridentata*	LC	herb;	Indigenous
Convolvulaceae	*Convolvulus ocellatus*	LC	herb;	Indigenous
Convolvulaceae	*Evolvulus alsinoides*	LC	herb;	Indigenous
Convolvulaceae	*Convolvulus multifidus*	LC	herb;	Indigenous; Endemic
Convolvulaceae	*Seddera capensis*	LC	suffrutex;	Indigenous
Convolvulaceae	*Ipomoea obscura*			Indigenous
Crassulaceae	*Kalanchoe rotundifolia*	LC	succulent; dwarf shrub;	Indigenous
Crassulaceae	*Kalanchoe paniculata*	LC	succulent; shrub;	Indigenous
Cucurbitaceae	*Corallocarpus triangularis*	LC	succulent; climber; herb;	Indigenous
Cucurbitaceae	*Cucumis africanus*	LC	herb;	Indigenous
Cucurbitaceae	*Acanthosicyos naudinianus*	LC	succulent; herb;	Indigenous
Cucurbitaceae	*Coccinia rehmannii*	LC	succulent; climber; herb;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Cucurbitaceae	*Kedrostis crassirostrata*	LC	succulent; climber; herb;	Indigenous
Cucurbitaceae	*Cucumis myriocarpus*	LC	herb;	Indigenous
Cucurbitaceae	*Trochomeria debilis*	LC	climber; succulent; herb;	Indigenous
Cyperaceae	*Kyllinga alba*	LC	mesophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Cyperus difformis*	LC	helophyte; mesophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Cyperus decurvatus*	LC	mesophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Schoenoplectus erectus*	LC	cyperoid; helophyte; emergent hydrophyte; herb;	Indigenous
Cyperaceae	*Cyperus congestus*	LC	cyperoid; helophyte; herb;	Indigenous
Cyperaceae	*Cyperus margaritaceus*	LC	mesophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Bulbostylis hispidula*	LC	mesophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Isolepis setacea*	LC	helophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Cyperus marlothii*	LC	mesophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Fuirena pubescens*	LC	mesophyte; cyperoid; helophyte; herb;	Indigenous
Cyperaceae	*Afroscirpoides dioeca*			Indigenous
Cyperaceae	*Cyperus longus*	NE	cyperoid; helophyte; herb;	Indigenous
Cyperaceae	*Bolboschoenus maritimus*	LC	cyperoid; helophyte; emergent hydrophyte; herb;	Indigenous
Cyperaceae	*Cyperus squarrosus*	LC	mesophyte; cyperoid; herb;	Indigenous
Cyperaceae	*Lipocarpha rehmannii*	LC	cyperoid; helophyte; herb;	Indigenous
Cyperaceae	*Bulbostylis burchellii*	LC	mesophyte; cyperoid; herb;	Indigenous
Ebenaceae	*Euclea sp.*			
Ebenaceae	*Euclea undulata*	LC	shrub; tree;	Indigenous
Elatinaceae	*Bergia anagalloides*	LC	herb;	Indigenous
Euphorbiaceae	*Tragia dioica*	LC	herb; dwarf shrub;	Indigenous
Euphorbiaceae	*Euphorbia duseimata*	LC	succulent; dwarf shrub;	Indigenous
Euphorbiaceae	*Croton gratissimus*	LC	shrub; tree;	Indigenous
Euphorbiaceae	*Euphorbia patula*		succulent; dwarf shrub;	Indigenous; Endemic
Euphorbiaceae	*Jatropha erythropoda*	LC	succulent; herb; dwarf shrub;	Indigenous
Euphorbiaceae	*Tragia physocarpa*	LC	dwarf shrub;	Indigenous
Euphorbiaceae	*Euphorbia avasmontana*	LC	succulent;	Indigenous
Euphorbiaceae	*Euphorbia inaequilatera*	LC		Indigenous
Euphorbiaceae	*Euphorbia rhombifolia*	LC	succulent; shrub;	Indigenous
Euphorbiaceae	*Euphorbia pseudotuberosa*	LC	succulent; dwarf shrub;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Euphorbiaceae	*Euphorbia spartaria*	LC	succulent; shrub;	Indigenous
Euphorbiaceae	*Euphorbia crassipes*	LC	succulent; shrub;	Indigenous
Euphorbiaceae	*Plukenetia africana*		dwarf shrub;	Indigenous
Fabaceae	*Calobota sericea*	LC	dwarf shrub; shrub;	Indigenous; Endemic
Fabaceae	*Lessertia frutescens*	LC		Indigenous
Fabaceae	*Otoptera burchellii*	LC	climber; herb; shrub;	Indigenous
Fabaceae	*Prosopis velutina*	NE	shrub; tree;	Not indigenous; Naturalised; Invasive
Fabaceae	*Indigofera sp.*			
Fabaceae	*Indigofera sessilifolia*	LC	herb; dwarf shrub;	Indigenous
Fabaceae	*Cullen tomentosum*	LC	herb;	Indigenous
Fabaceae	*Indigofera daleoides*	NE	herb;	Indigenous
Fabaceae	*Argyrolobium incanum*	LC	dwarf shrub;	Indigenous; Endemic
Fabaceae	*Melolobium candicans*	LC	herb; dwarf shrub; shrub;	Indigenous
Fabaceae	*Leobordea platycarpa*	LC		Indigenous
Fabaceae	*Calobota cuspidosa*	LC	shrub;	Indigenous
Fabaceae	*Calobota linearifolia*	LC	shrub;	Indigenous
Fabaceae	*Rhynchosia totta*	LC	climber; herb;	Indigenous
Fabaceae	*Lotononis crumanina*	LC	herb;	Indigenous
Fabaceae	*Melolobium microphyllum*	LC	dwarf shrub; shrub;	Indigenous
Fabaceae	*Vachellia hebeclada*	LC		Indigenous
Fabaceae	*Vachellia erioloba*	LC		Indigenous
Fabaceae	*Lotononis sp.*			
Fabaceae	*Lessertia macrostachya*	LC	herb; dwarf shrub;	Indigenous
Fabaceae	*Tephrosia burchellii*	LC	herb;	Indigenous
Fabaceae	*Lotononis sparsiflora*	LC	herb;	Indigenous
Fabaceae	*Crotalaria virgultalis*	LC	shrub;	Indigenous
Fabaceae	*Melolobium calycinum*	LC	dwarf shrub; shrub;	Indigenous
Fabaceae	*Argyrolobium sp.*			
Fabaceae	*Elephantorrhiza elephantina*	LC	suffrutex; dwarf shrub; shrub;	Indigenous
Fabaceae	*Vachellia karroo*	LC		Indigenous
Fabaceae	*Senna italica*	LC	herb;	Indigenous
Fabaceae	*Requienia pseudosphaerosperma*	LC	herb; shrub;	Indigenous
Fabaceae	*Crotalaria orientalis*	LC	herb; dwarf shrub;	Indigenous
Fabaceae	*Tephrosia purpurea*	NE	herb;	Indigenous
Fabaceae	*Crotalaria spartioides*	LC	shrub;	Indigenous
Fabaceae	*Rhynchosia totta*		climber; herb;	Indigenous
Fabaceae	*Ptycholobium biflorum*	LC	herb; dwarf shrub;	Indigenous
Fabaceae	*Rhynchosia totta*		climber; herb;	Indigenous
Fabaceae	*Prosopis glandulosa*	NE	shrub; tree;	Not indigenous; Naturalised
Fabaceae	*Chamaecrista biensis*	LC	herb;	Indigenous
Fabaceae	*Crotalaria podocarpa*	LC	herb;	Indigenous
Fabaceae	*Indigofera alternans*	LC	herb;	Indigenous
Fabaceae	*Parkinsonia africana*	LC	shrub; tree;	Indigenous
Fabaceae	*Indigastrum niveum*		herb;	Indigenous
Fabaceae	*Cyamopsis serrata*	LC	herb;	Indigenous
Fabaceae	*Pomaria lactea*	LC		Indigenous
Fabaceae	*Listia heterophylla*	LC		Indigenous
Fabaceae	*Rhynchosia confusa*	NE	climber; herb;	Indigenous
Fabaceae	*Requienia sphaerosperma*	LC	herb;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Fabaceae	*Melolobium humile*	LC	dwarf shrub;	Indigenous; Endemic
Fabaceae	*Melolobium macrocalyx*	LC	dwarf shrub; shrub;	Indigenous
Fabaceae	*Indigofera heterotricha*			Indigenous
Fabaceae	*Crotalaria griquensis*	LC	herb;	Indigenous
Fabaceae	*Vachellia haematoxylon*	LC		Indigenous
Geraniaceae	*Pelargonium multiradiatum*	LC	succulent; geophyte;	Indigenous; Endemic
Geraniaceae	*Monsonia angustifolia*	LC	herb;	Indigenous
Gisekiaceae	*Gisekia africana*			Indigenous
Gisekiaceae	*Gisekia pharnaceoides*	LC	herb;	Indigenous
Gisekiaceae	*Gisekia pharnaceoides*			Indigenous
Gisekiaceae	*Gisekia africana*		herb;	Indigenous
Gisekiaceae	*Gisekia africana*	LC	herb;	Indigenous
Hyacinthaceae	*Albuca sp.*			
Hyacinthaceae	*Dipcadi marlothii*	LC	geophyte;	Indigenous
Hyacinthaceae	*Dipcadi viride*	LC	geophyte;	Indigenous
Hyacinthaceae	*Ledebouria revoluta*	LC	geophyte;	Indigenous
Hyacinthaceae	*Ledebouria apertiflora*	LC	geophyte;	Indigenous
Hyacinthaceae	*Ledebouria sp.*			
Hyacinthaceae	*Drimia sp.*			
Hyacinthaceae	*Albuca seineri*	LC	geophyte;	Indigenous
Iridaceae	*Babiana hypogaea*	LC	geophyte; herb;	Indigenous
Iridaceae	*Moraea polystachya*	LC	geophyte; herb;	Indigenous
Iridaceae	*Ferraria glutinosa*	LC	geophyte; herb;	Indigenous
Iridaceae	*Moraea longistyla*	LC	geophyte; herb;	Indigenous; Endemic
Iridaceae	*Moraea pallida*	LC	geophyte; herb;	Indigenous
Iridaceae	*Lapeirousia littoralis*			Indigenous
Iridaceae	*Afrosolen sandersonii*			Indigenous
Juncaceae	*Juncus rigidus*	LC	helophyte; herb;	Indigenous
Lamiaceae	*Acrotome inflata*	LC	herb;	Indigenous
Lamiaceae	*Ocimum filamentosum*	LC	herb;	Indigenous
Lamiaceae	*Leonotis pentadentata*	LC		Indigenous
Lamiaceae	*Stachys spathulata*	LC	herb;	Indigenous
Lamiaceae	*Ocimum americanum*	LC	herb;	Indigenous
Lamiaceae	*Stachys burchelliana*	LC	shrub;	Indigenous
Lamiaceae	*Salvia verbenaca*	LC	herb;	Not indigenous; Naturalised; Invasive
Limeaceae	*Limeum viscosum*	NE	herb;	Indigenous
Limeaceae	*Limeum viscosum*	LC	herb;	Indigenous; Endemic
Limeaceae	*Limeum myosotis*	LC	herb;	Indigenous
Limeaceae	*Limeum viscosum*			Indigenous
Limeaceae	*Limeum aethiopicum*	NE		Indigenous; Endemic
Lobeliaceae	*Lobelia thermalis*	LC	herb;	Indigenous
Lophiocarpaceae	*Lophiocarpus polystachyus*	LC	dwarf shrub; herb;	Indigenous
Loranthaceae	*Tapinanthus oleifolius*	LC	succulent; parasite; shrub;	Indigenous
Loranthaceae	*Tapinanthus forbesii*	LC	succulent; parasite; shrub;	Indigenous
Lythraceae	*Ammannia senegalensis*	LC	herb;	Indigenous
Malvaceae	*Hibiscus fleckii*	LC	herb;	Indigenous
Malvaceae	*Hibiscus pusillus*	LC	herb;	Indigenous
Malvaceae	*Hermannia sp.*			
Malvaceae	*Hermannia quartiniana*	LC	herb;	Indigenous
Malvaceae	*Hermannia stellulata*	LC	herb;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Malvaceae	*Sida chrysantha*	LC	dwarf shrub;	Indigenous
Malvaceae	*Abutilon austro-africanum*	LC	dwarf shrub;	Indigenous
Malvaceae	*Pavonia burchellii*	LC	dwarf shrub;	Indigenous
Malvaceae	*Waltheria indica*	LC	herb;	Indigenous
Malvaceae	*Grewia flava*	LC	shrub;	Indigenous
Malvaceae	*Hermannia tomentosa*	LC	herb;	Indigenous
Malvaceae	*Hibiscus engleri*	LC	herb;	Indigenous
Malvaceae	*Sida ovata*	LC	dwarf shrub; herb;	Indigenous
Malvaceae	*Hermannia affinis*	LC	dwarf shrub;	Indigenous
Malvaceae	*Melhania virescens*	LC	dwarf shrub;	Indigenous
Malvaceae	*Sida cordifolia*	LC	dwarf shrub;	Indigenous
Malvaceae	*Hermannia modesta*	LC	herb; dwarf shrub;	Indigenous
Malvaceae	*Hibiscus micranthus*	LC	herb; shrub;	Indigenous
Malvaceae	*Hermannia comosa*	LC	herb;	Indigenous
Malvaceae	*Sida pseudocordifolia*	LC	shrub; herb;	Indigenous
Malvaceae	*Hibiscus sp.*			
Malvaceae	*Pavonia senegalensis*	LC	herb;	Indigenous
Malvaceae	*Melhania burchellii*	LC	herb;	Indigenous
Malvaceae	*Hibiscus ludwigii*	LC	herb; shrub;	Indigenous
Molluginaceae	*Hypertelis cerviana*		herb;	Indigenous
Montiniaceae	*Montinia caryophyllacea*	LC	shrub;	Indigenous
Moraceae	*Ficus cordata*	LC	tree;	Indigenous
Myrtaceae	*Eugenia sp.*			
Neuradaceae	*Grielum humifusum*	LC	herb;	Indigenous
Nyctaginaceae	*Phaeoptilum spinosum*	LC	shrub;	Indigenous
Onagraceae	*Ludwigia adscendens*	LC	hydrophyte; herb;	Indigenous
Orobanchaceae	*Striga gesnerioides*	LC	parasite; herb;	Indigenous
Oxalidaceae	*Oxalis sp.*			
Oxalidaceae	*Oxalis haedulipes*	LC	geophyte;	Indigenous
Oxalidaceae	*Oxalis obliquifolia*	LC	geophyte;	Indigenous
Pedaliaceae	*Dicerocaryum eriocarpum*	LC	scrambler; herb;	Indigenous
Pedaliaceae	*Sesamum triphyllum*	LC	herb;	Indigenous
Pedaliaceae	*Harpagophytum procumbens*	LC		Indigenous
Pedaliaceae	*Harpagophytum procumbens*	NE	herb;	Indigenous
Pedaliaceae	*Ceratotheca triloba*	LC	herb;	Indigenous
Phyllanthaceae	*Phyllanthus maderaspatensis*	LC	herb;	Indigenous
Phyllanthaceae	*Phyllanthus parvulus*	LC	herb; dwarf shrub;	Indigenous
Phyllanthaceae	*Phyllanthus parvulus*	LC	herb; dwarf shrub;	Indigenous
Poaceae	*Anthephora argentea*	LC	graminoid;	Indigenous
Poaceae	*Sporobolus fimbriatus*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis rotifer*	LC	graminoid;	Indigenous
Poaceae	*Urochloa panicoides*	LC	graminoid;	Indigenous
Poaceae	*Schmidtia kalahariensis*	LC	graminoid;	Indigenous
Poaceae	*Stipagrostis ciliata*			Indigenous
Poaceae	*Aristida adscensionis*	LC	graminoid;	Indigenous
Poaceae	*Elionurus muticus*	LC	graminoid;	Indigenous
Poaceae	*Cymbopogon caesius*	LC		Indigenous
Poaceae	*Eustachys paspaloides*	LC	graminoid;	Indigenous
Poaceae	*Megaloprotachne albescens*	LC	graminoid;	Indigenous
Poaceae	*Tricholaena monachne*	LC	graminoid;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Poaceae	*Digitaria polyphylla*	LC	graminoid;	Indigenous
Poaceae	*Cenchrus ciliaris*	LC	graminoid;	Indigenous
Poaceae	*Tragus racemosus*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis nindensis*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis pallens*	LC	graminoid;	Indigenous
Poaceae	*Sporobolus sp.*			
Poaceae	*Eragrostis mexicana*	NE	graminoid;	Not indigenous; Naturalised
Poaceae	*Stipagrostis hirtigluma*	LC	graminoid;	Indigenous
Poaceae	*Brachiaria marlothii*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis lehmanniana*	LC	graminoid;	Indigenous
Poaceae	*Aristida stipitata*	LC	graminoid;	Indigenous
Poaceae	*Digitaria eriantha*	LC	graminoid;	Indigenous
Poaceae	*Digitaria sanguinalis*	NE	graminoid;	Not indigenous; Naturalised
Poaceae	*Enneapogon cenchroides*	LC	graminoid;	Indigenous
Poaceae	*Stipagrostis uniplumis*	LC	graminoid;	Indigenous
Poaceae	*Panicum coloratum*	LC	graminoid;	Indigenous
Poaceae	*Andropogon schirensis*	LC	graminoid;	Indigenous
Poaceae	*Enneapogon desvauxii*	LC	graminoid;	Indigenous
Poaceae	*Brachiaria brizantha*	LC	graminoid;	Indigenous
Poaceae	*Andropogon chinensis*	LC	graminoid;	Indigenous
Poaceae	*Sporobolus ioclados*	LC	graminoid;	Indigenous
Poaceae	*Brachiaria nigropedata*	LC	graminoid;	Indigenous
Poaceae	*Panicum maximum*	LC	graminoid;	Indigenous
Poaceae	*Melinis sp.*			
Poaceae	*Anthephora pubescens*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis rigidior*	LC	graminoid;	Indigenous
Poaceae	*Stipagrostis ciliata*	LC	graminoid;	Indigenous
Poaceae	*Aristida congesta*	LC	graminoid;	Indigenous
Poaceae	*Melinis repens*	LC	graminoid;	Indigenous
Poaceae	*Heteropogon contortus*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis trichophora*	LC	graminoid;	Indigenous
Poaceae	*Aristida vestita*	LC	graminoid;	Indigenous
Poaceae	*Schmidtia pappophoroides*	LC	graminoid;	Indigenous
Poaceae	*Enneapogon scoparius*	LC	graminoid;	Indigenous
Poaceae	*Triraphis andropogonoides*	LC	graminoid;	Indigenous
Poaceae	*Oropetium capense*	LC	graminoid;	Indigenous
Poaceae	*Aristida congesta*	LC	graminoid;	Indigenous
Poaceae	*Hyparrhenia hirta*	LC	graminoid;	Indigenous
Poaceae	*Urochloa stolonifera*	LC	graminoid;	Indigenous
Poaceae	*Pogonarthria squarrosa*	LC	graminoid;	Indigenous
Poaceae	*Lamarckia aurea*	NE	graminoid;	Not indigenous; Naturalised; Invasive
Poaceae	*Eragrostis barrelieri*	NE	graminoid;	Not indigenous; Naturalised
Poaceae	*Panicum kalaharense*	LC	graminoid;	Indigenous
Poaceae	*Stipagrostis obtusa*	LC	graminoid;	Indigenous
Poaceae	*Melinis repens*	LC	graminoid;	Indigenous
Poaceae	*Aristida engleri*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis viscosa*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis echinochloidea*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis curvula*	LC	graminoid;	Indigenous

Family	Species	IUCN	Diagnostic	Ecology
Poaceae	*Eleusine coracana*	LC	graminoid;	Indigenous
Poaceae	*Aristida congesta*			Indigenous
Poaceae	*Leptochloa fusca*	LC	graminoid;	Indigenous
Poaceae	*Chrysopogon serrulatus*	LC	graminoid;	Indigenous
Poaceae	*Tragus berteronianus*	LC	graminoid;	Indigenous
Poaceae	*Trichoneura grandiglumis*	LC	graminoid;	Indigenous
Poaceae	*Sporobolus acinifolius*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis porosa*	LC	graminoid;	Indigenous
Poaceae	*Cymbopogon pospischilii*	NE	graminoid;	Indigenous
Poaceae	*Setaria verticillata*	LC	graminoid;	Indigenous
Poaceae	*Eragrostis gummiflua*	LC	graminoid;	Indigenous
Poaceae	*Coelachyrum yemenicum*	LC	graminoid;	Indigenous
Poaceae	*Stipagrostis amabilis*	LC	dwarf shrub; shrub; graminoid;	Indigenous
Poaceae	*Eragrostis biflora*	LC	graminoid;	Indigenous
Poaceae	*Cynodon dactylon*	LC	graminoid;	Indigenous
Poaceae	*Fingerhuthia africana*	LC	graminoid;	Indigenous
Poaceae	*Aristida meridionalis*	LC	graminoid;	Indigenous
Polygalaceae	*Polygala leptophylla*	LC	dwarf shrub;	Indigenous
Polygalaceae	*Polygala leptophylla*	LC	dwarf shrub;	Indigenous
Polygalaceae	*Polygala seminuda*	LC	herb; dwarf shrub;	Indigenous
Polygonaceae	*Oxygonum delagoense*	LC	herb;	Indigenous
Polygonaceae	*Persicaria limbata*		helophyte; herb;	Cryptogenic
Portulacaceae	*Portulaca kermesina*	LC	succulent; herb;	Indigenous
Portulacaceae	*Portulaca hereroensis*	LC	succulent; herb;	Indigenous
Pteridaceae	*Cheilanthes eckloniana*	LC	lithophyte; geophyte; herb;	Indigenous
Pteridaceae	*Cheilanthes hirta*	LC	herb;	Indigenous
Pteridaceae	*Pellaea calomelanos*	LC	lithophyte; geophyte; herb;	Indigenous
Rhamnaceae	*Helinus spartioides*	LC	dwarf shrub;	Indigenous
Ricciaceae	*Riccia cupulifera*		bryophyte;	Indigenous; Endemic
Ricciaceae	*Riccia albolimbata*		bryophyte;	Indigenous
Rubiaceae	*Kohautia sp.*			
Rubiaceae	*Kohautia caespitosa*	LC	herb;	Indigenous
Rubiaceae	*Vangueria macrocalyx*	LC	shrub; tree;	Indigenous
Rubiaceae	*Cordylostigma virgatum*		herb;	Indigenous
Rubiaceae	*Anthospermum rigidum*	LC	dwarf shrub;	Indigenous
Santalaceae	*Thesium hystricoides*	LC	shrub; parasite; dwarf shrub;	Indigenous
Santalaceae	*Thesium hystrix*	LC	dwarf shrub; parasite; shrub;	Indigenous
Santalaceae	*Viscum rotundifolium*	LC	succulent; parasite; shrub;	Indigenous
Scrophulariaceae	*Peliostomum junceum*			Indigenous
Scrophulariaceae	*Aptosimum spinescens*	LC	dwarf shrub;	Indigenous
Scrophulariaceae	*Selago paniculata*	LC	herb;	Indigenous; Endemic
Scrophulariaceae	*Aptosimum albomarginatum*	LC	dwarf shrub;	Indigenous
Scrophulariaceae	*Peliostomum leucorrhizum*	LC	dwarf shrub;	Indigenous
Scrophulariaceae	*Aptosimum elongatum*	LC	dwarf shrub;	Indigenous
Scrophulariaceae	*Jamesbrittenia sp.*			

Family	Species	IUCN	Diagnostic	Ecology
Scrophulariaceae	*Jamesbrittenia atropurpurea*	LC	shrub; dwarf shrub;	Indigenous
Scrophulariaceae	*Jamesbrittenia integerrima*	LC	herb; dwarf shrub;	Indigenous
Scrophulariaceae	*Sutera griquensis*	LC	herb;	Indigenous; Endemic
Scrophulariaceae	*Selago mixta*	LC	herb;	Indigenous; Endemic
Scrophulariaceae	*Jamesbrittenia atropurpurea*	LC	dwarf shrub;	Indigenous
Scrophulariaceae	*Aptosimum marlothii*	LC	dwarf shrub;	Indigenous
Solanaceae	*Lycium pilifolium*	LC	dwarf shrub; shrub;	Indigenous
Solanaceae	*Lycium hirsutum*	LC	dwarf shrub; shrub;	Indigenous
Solanaceae	*Solanum lichtensteinii*	LC	dwarf shrub; shrub;	Indigenous
Solanaceae	*Solanum catombelense*	LC	dwarf shrub; shrub;	Indigenous
Solanaceae	*Datura stramonium*		herb; shrub;	Not indigenous; Naturalised; Invasive
Solanaceae	*Solanum burchellii*	LC	dwarf shrub; shrub;	Indigenous
Solanaceae	*Lycium cinereum*	LC	dwarf shrub; shrub;	Indigenous
Talinaceae	*Talinum arnotii*	LC	succulent; dwarf shrub;	Indigenous
Talinaceae	*Talinum tenuissimum*	LC	succulent; dwarf shrub;	Indigenous
Thymelaeaceae	*Lasiosiphon polycephalus*	LC		Indigenous
Vahliaceae	*Vahlia capensis*	NE	herb;	Indigenous
Vahliaceae	*Vahlia capensis*		herb;	Indigenous
Verbenaceae	*Chascanum pinnatifidum*	LC	herb;	Indigenous
Verbenaceae	*Chascanum schlechteri*	LC	herb;	Indigenous
Verbenaceae	*Lantana rugosa*	LC	shrub;	Indigenous
Verbenaceae	*Chascanum adenostachyum*	LC	herb;	Indigenous
Verbenaceae	*Chascanum hederaceum*	LC	herb;	Indigenous
Violaceae	*Afrohybanthus densifolius*		herb;	Indigenous
Zygophyllaceae	*Tribulus zeyheri*			Indigenous
Zygophyllaceae	*Tribulus terrestris*	LC	herb;	Indigenous
Zygophyllaceae	*Tribulus zeyheri*	LC	dwarf shrub; herb;	Indigenous

Appendix 6: Bird species list

Common group	Common species	Genus	Species
Ostrich	Common	*Struthio*	*camelus*
Grebe	Little	*Tachybaptus*	*ruficollis*
Cormorant	Reed	*Microcarbo*	*africanus*
Heron	Grey	*Ardea*	*cinerea*
Heron	Black-headed	*Ardea*	*melanocephala*
Egret	Little	*Egretta*	*garzetta*
Egret	Western Cattle	*Bubulcus*	*ibis*
	Hamerkop	*Scopus*	*umbretta*
Stork	Black	*Ciconia*	*nigra*
Ibis	African Sacred	*Threskiornis*	*aethiopicus*
Ibis	Glossy	*Plegadis*	*falcinellus*
Ibis	Hadada	*Bostrychia*	*hagedash*
Goose	Spur-winged	*Plectropterus*	*gambensis*
Goose	Egyptian	*Alopochen*	*aegyptiaca*
Shelduck	South African	*Tadorna*	*cana*
Duck	African Black	*Anas*	*sparsa*
Duck	Yellow-billed	*Anas*	*undulata*
Teal	Red-billed	*Anas*	*erythrorhyncha*
Duck	White-faced Whistling	*Dendrocygna*	*viduata*
	Secretarybird	*Sagittarius*	*serpentarius*
Vulture	White-backed	*Gyps*	*africanus*
Vulture	Lappet-faced	*Torgos*	*tracheliotos*
Falcon	Lanner	*Falco*	*biarmicus*
Hobby	Eurasian	*Falco*	*subbuteo*
Kestrel	Greater	*Falco*	*rupicoloides*
Kestrel	Rock	*Falco*	*rupicolus*
Falcon	Pygmy	*Polihierax*	*semitorquatus*
Kite	Black-winged	*Elanus*	*caeruleus*
Eagle	Verreaux's	*Aquila*	*verreauxii*
Eagle	Booted	*Hieraaetus*	*pennatus*
Eagle	Martial	*Polemaetus*	*bellicosus*
Eagle	Brown Snake	*Circaetus*	*cinereus*
Eagle	Black-chested Snake	*Circaetus*	*pectoralis*
Buzzard	Jackal	*Buteo*	*rufofuscus*
Buzzard	Common	*Buteo*	*buteo*
	Shikra	*Accipiter*	*badius*
Goshawk	Gabar	*Micronisus*	*gabar*
Goshawk	Pale Chanting	*Melierax*	*canorus*
Francolin	Orange River	*Scleroptila*	*gutturalis*
Spurfowl	Red-billed	*Pternistis*	*adspersus*
Quail	Common	*Coturnix*	*coturnix*
Guineafowl	Helmeted	*Numida*	*meleagris*
Buttonquail	Common	*Turnix*	*sylvaticus*
Coot	Red-knobbed	*Fulica*	*cristata*
Bustard	Kori	*Ardeotis*	*kori*
Bustard	Ludwig's	*Neotis*	*ludwigii*
Korhaan	Red-crested	*Lophotis*	*ruficrista*
Plover	Three-banded	*Charadrius*	*tricollaris*
Lapwing	Crowned	*Vanellus*	*coronatus*
Lapwing	Blacksmith	*Vanellus*	*armatus*
	Ruff	*Calidris*	*pugnax*
Sandpiper	Wood	*Tringa*	*glareola*
Stilt	Black-winged	*Himantopus*	*himantopus*
Thick-knee	Spotted	*Burhinus*	*capensis*

Common group	Common species	Genus	Species
Courser	Double-banded	*Rhinoptilus*	*africanus*
Sandgrouse	Namaqua	*Pterocles*	*namaqua*
Sandgrouse	Burchell's	*Pterocles*	*burchelli*
Sandgrouse	Double-banded	*Pterocles*	*bicinctus*
Pigeon	Speckled	*Columba*	*guinea*
Dove	Red-eyed	*Streptopelia*	*semitorquata*
Dove	Cape Turtle	*Streptopelia*	*capicola*
Dove	Laughing	*Spilopelia*	*senegalensis*
Dove	Namaqua	*Oena*	*capensis*
Go-away-bird	Grey	*Crinifer*	*concolor*
Cuckoo	African	*Cuculus*	*gularis*
Cuckoo	Black	*Cuculus*	*clamosus*
Cuckoo	Great Spotted	*Clamator*	*glandarius*
Cuckoo	Levaillant's	*Clamator*	*levaillantii*
Cuckoo	Jacobin	*Clamator*	*jacobinus*
Cuckoo	Klaas's	*Chrysococcyx*	*klaas*
Cuckoo	Diederik	*Chrysococcyx*	*caprius*
Owl	Western Barn	*Tyto*	*alba*
Owl	Southern White-faced Scops	*Ptilopsis*	*granti*
Owlet	Pearl-spotted	*Glaucidium*	*perlatum*
Eagle-Owl	Spotted	*Bubo*	*africanus*
Eagle-Owl	Verreaux's	*Bubo*	*lacteus*
Nightjar	Rufous-cheeked	*Caprimulgus*	*rufigena*
Swift	Common	*Apus*	*apus*
Swift	Bradfield's	*Apus*	*bradfieldi*
Swift	White-rumped	*Apus*	*caffer*
Swift	Little	*Apus*	*affinis*
Swift	Alpine	*Tachymarptis*	*melba*
Swift	African Palm	*Cypsiurus*	*parvus*
Mousebird	White-backed	*Colius*	*colius*
Mousebird	Red-faced	*Urocolius*	*indicus*
Kingfisher	Brown-hooded	*Halcyon*	*albiventris*
Bee-eater	European	*Merops*	*apiaster*
Bee-eater	Swallow-tailed	*Merops*	*hirundineus*
Roller	European	*Coracias*	*garrulus*
Roller	Lilac-breasted	*Coracias*	*caudatus*
Roller	Purple	*Coracias*	*naevius*
Hoopoe	African	*Upupa*	*africana*
Wood Hoopoe	Green	*Phoeniculus*	*purpureus*
Scimitarbill	Common	*Rhinopomastus*	*cyanomelas*
Hornbill	African Grey	*Lophoceros*	*nasutus*
Hornbill	Southern Yellow-billed	*Tockus*	*leucomelas*
Barbet	Black-collared	*Lybius*	*torquatus*
Barbet	Acacia Pied	*Tricholaema*	*leucomelas*
Barbet	Crested	*Trachyphonus*	*vaillantii*
Honeyguide	Greater	*Indicator*	*indicator*
Honeyguide	Lesser	*Indicator*	*minor*
Woodpecker	Bennett's	*Campethera*	*bennettii*
Woodpecker	Golden-tailed	*Campethera*	*abingoni*
Woodpecker	Cardinal	*Dendropicos*	*fuscescens*
Lark	Monotonous	*Mirafra*	*passerina*
Lark	Fawn-colored	*Calendulauda*	*africanoides*
Lark	Sabota	*Calendulauda*	*sabota*
Lark	Short-clawed	*Certhilauda*	*chuana*
Lark	Spike-heeled	*Chersomanes*	*albofasciata*
Sparrow-Lark	Grey-backed	*Eremopterix*	*verticalis*

Common group	Common species	Genus	Species
Lark	Red-capped	*Calandrella*	*cinerea*
Swallow	Barn	*Hirundo*	*rustica*
Swallow	White-throated	*Hirundo*	*albigularis*
Swallow	Pearl-breasted	*Hirundo*	*dimidiata*
Swallow	Red-breasted	*Cecropis*	*semirufa*
Swallow	Greater Striped	*Cecropis*	*cucullata*
Martin	Rock	*Ptyonoprogne*	*fuligula*
Martin	Brown-throated	*Riparia*	*paludicola*
Tit	Ashy	*Melaniparus*	*cinerascens*
Drongo	Fork-tailed	*Dicrurus*	*adsimilis*
Oriole	Eurasian Golden	*Oriolus*	*oriolus*
Crow	Pied	*Corvus*	*albus*
Tit	Cape Penduline	*Anthoscopus*	*minutus*
Babbler	Southern Pied	*Turdoides*	*bicolor*
Bulbul	African Red-eyed	*Pycnonotus*	*nigricans*
Thrush	Groundscraper	*Turdus*	*litsitsirupa*
Thrush	Short-toed Rock	*Monticola*	*brevipes*
Wheatear	Mountain	*Myrmecocichla*	*monticola*
Wheatear	Capped	*Oenanthe*	*pileata*
Chat	Familiar	*Oenanthe*	*familiaris*
Chat	Ant-eating	*Myrmecocichla*	*formicivora*
Robin-Chat	Cape	*Cossypha*	*caffra*
Scrub Robin	Karoo	*Cercotrichas*	*coryphoeus*
Scrub Robin	Kalahari	*Cercotrichas*	*paena*
Warbler	Willow	*Phylloscopus*	*trochilus*
Eremomela	Yellow-bellied	*Eremomela*	*icteropygialis*
Warbler	Lesser Swamp	*Acrocephalus*	*gracilirostris*
Warbler	African Reed	*Acrocephalus*	*baeticatus*
Wren-Warbler	Barred	*Calamonastes*	*fasciolatus*
Warbler	Rufous-eared	*Malcorus*	*pectoralis*
Crombec	Long-billed	*Sylvietta*	*rufescens*
Cisticola	Desert	*Cisticola*	*aridulus*
	Neddicky	*Cisticola*	*fulvicapilla*
Cisticola	Grey-backed	*Cisticola*	*subruficapilla*
Cisticola	Tinkling	*Cisticola*	*rufilatus*
Cisticola	Rattling	*Cisticola*	*chiniana*
Cisticola	Levaillant's	*Cisticola*	*tinniens*
Prinia	Black-chested	*Prinia*	*flavicans*
Flycatcher	Spotted	*Muscicapa*	*striata*
Warbler	Chestnut-vented	*Curruca*	*subcoerulea*
Warbler	Layard's	*Curruca*	*layardi*
Flycatcher	Marico	*Melaenornis*	*mariquensis*
Flycatcher	Chat	*Melaenornis*	*infuscatus*
Flycatcher	Fiscal	*Melaenornis*	*silens*
Batis	Pririt	*Batis*	*pririt*
Flycatcher	Fairy	*Stenostira*	*scita*
Wagtail	Cape	*Motacilla*	*capensis*
Pipit	African	*Anthus*	*cinnamomeus*
Pipit	Buffy	*Anthus*	*vaalensis*
Pipit	African Rock	*Anthus*	*crenatus*
Shrike	Lesser Grey	*Lanius*	*minor*
Fiscal	Southern	*Lanius*	*collaris*
Shrike	Red-backed	*Lanius*	*collurio*
Shrike	Crimson-breasted	*Laniarius*	*atrococcineus*
Tchagra	Brown-crowned	*Tchagra*	*australis*
	Bokmakierie	*Telophorus*	*zeylonus*
	Brubru	*Nilaus*	*afer*

Common group	Common species	Genus	Species
Myna	Common	*Acridotheres*	*tristis*
Starling	Wattled	*Creatophora*	*cinerea*
Starling	Violet-backed	*Cinnyricinclus*	*leucogaster*
Starling	Cape	*Lamprotornis*	*nitens*
Starling	Pale-winged	*Onychognathus*	*nabouroup*
Starling	Pied	*Lamprotornis*	*bicolor*
Oxpecker	Red-billed	*Buphagus*	*erythrorynchus*
Sunbird	Marico	*Cinnyris*	*mariquensis*
Sunbird	White-bellied	*Cinnyris*	*talatala*
Sunbird	Dusky	*Cinnyris*	*fuscus*
Weaver	Red-billed Buffalo	*Bubalornis*	*niger*
Sparrow-Weaver	White-browed	*Plocepasser*	*mahali*
Weaver	Sociable	*Philetairus*	*socius*
Sparrow	House	*Passer*	*domesticus*
Sparrow	Great	*Passer*	*motitensis*
Sparrow	Cape	*Passer*	*melanurus*
Sparrow	Yellow-throated Bush	*Gymnoris*	*superciliaris*
Weaver	Scaly-feathered	*Sporopipes*	*squamifrons*
Weaver	Southern Masked	*Ploceus*	*velatus*
Quelea	Red-billed	*Quelea*	*quelea*
Bishop	Southern Red	*Euplectes*	*orix*
Finch	Red-headed	*Amadina*	*erythrocephala*
Pytilia	Green-winged	*Pytilia*	*melba*
Firefinch	Red-billed	*Lagonosticta*	*senegala*
Waxbill	Violet-eared	*Granatina*	*granatina*
Waxbill	Black-faced	*Brunhilda*	*erythronotos*
	Quailfinch	*Ortygospiza*	*atricollis*
Whydah	Pin-tailed	*Vidua*	*macroura*
Whydah	Shaft-tailed	*Vidua*	*regia*
Whydah	Long-tailed Paradise	*Vidua*	*paradisaea*
Canary	Black-throated	*Crithagra*	*atrogularis*
Canary	Yellow	*Crithagra*	*flaviventris*
Bunting	Lark-like	*Emberiza*	*impetuani*
Bunting	Cinnamon-breasted	*Emberiza*	*tahapisi*
Bunting	Cape	*Emberiza*	*capensis*
Bunting	Golden-breasted	*Emberiza*	*flaviventris*
Dove	Rock	*Columba*	*livia*
Korhaan	Northern Black	*Afrotis*	*afraoides*
Thrush	Karoo	*Turdus*	*smithi*
White-eye	Orange River	*Zosterops*	*pallidus*
Lark	Eastern Clapper	*Mirafra*	*fasciolata*
Sparrow	Southern Grey-headed	*Passer*	*diffusus*
Pipit	Nicholson's	*Anthus*	*nicholsoni*

Appendix 7. 1:Issues and Response Report
In progress

Appendix 7. 2: Site Notices / Background Information Documents / Newspaper Advert

ZF MGCAWU DISTRIKMUNISIPALITEIT

KENNISGEWING VAN RAADSVERGADERING

Kennis geskied hiermee in terme van die Wet op Plaaslike Regering: Munisipale Stelsels, 2000 (Wet 32/2000), dat 'n Raadsvergadering van ZF Mgcawu Distrikmunisipaliteit sal plaasvind op **Dinsdag 30 Augustus 2022 om 12:00 in die Raadsaal van ZF Mgcawu Distrikmunisipaliteit**

AK Tieties
Wnde Munisipale Bestuurder

The overflowing sewage manhole.

KATHU

Sewage festers as Gamagara snubs local business

The Democratic Alliance (DA) wants Gamagara local municipality to explain why they chose to delay the fixing of a sewage blockage, that was causing havoc at Kathu Primary School, by summonsing a company to come all the way from Mafikeng to do what local contractors could do at a fraction of the price ?

According to DA councillor Anna-Marie Caetano, the school was badly affected by a sewage blockage since 13 August 2022. The municipal maintenance crew tried to address the blockage, but did not have the necessary capacity or equipment to solve the problem. The situation quickly worsened.

Sewage flowed down the street opposite the Kathu Primary School and opposite Pikkie Pret Pre-School, the overflowing manhole positioned at the spot where young school children get picked up and dropped off every day, created a massive health and hygiene risk. The school had to close the girls' bathroom for hygiene reasons. The house behind the manhole was also severely affected.

Gamagara municipality gave an undertaking to get a company to travel 400 kilometres from Mafikeng to assist, even though there were local companies that were willing and equipped to assist.

In the meantime, a local company offered to help with fault-finding, free of charge, out of desperation for the school children and affected residents.

By the time that the Mafikeng company finally arrived in Kathu at 16:00 on Thursday 18 August 2022 with equipment that was clearly inadequate to fix the blockage, another local company had stepped in and was well into the process of remedying the problem.

The blockage is now completely resolved, thanks to the assistance of the two local companies.

It is inexplicable as to why Gamagara municipality would choose to spend more than R60 000 to bring in a company from the North West, which in the end was ill-equipped to deal with the sewage problem, when a local company would have charged around R25 000 to get the job done.

The DA will not leave the matter here. We will submit questions to council to determine the relationship between the municipality and the Mafikeng company and to probe prior work done by the company.

On behalf of the community of Kathu, the DA would like to thank Carl Viljoen from JunoCorp and Jaco Geyser from Luhlaza Waste Management who were more than willing and able to help resolve this ghastly problem.

The DA Provincial Leader, Harold McGluwa, made use of Women's Day on 09 August 2022 to hand over awards to some hard-working members of the party. This included awards presented to Gamagara councillors Henriëtte du Plessis *(right)* **and Anna-Marie Caetano** *(left)* **for holding the Gamagara local municipality accountable by preventing a massive water tariff hike from being implemented earlier on this year.**

PUBLIC PARTICIPATION NOTIFICATION OF AN ENVIRONMENTAL IMPACT ASSESSMENT APPLICATION (BASIC ASSESSMENT PROCESS FOR A PROSPECTING RIGHT) IN TERMS OF SECTION 16 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002) AS AMENDED BY SECTION 12 OF THE ACT NO. 49 OF 2008: ON THE FARMS OLIVE PAN 282, GAMA 283, TELELE 12, DIKGATHLONG 268, DIBIAGHOMO 226, BOSHOF 300, ROLDRAAI 333, DRAKENSTEIN 263, EAST 270, UMTU 281, OLIVEWOOD 284, MOOIDRAAI 310, KONGONI 311, RIVIERA 335, SMARTT 314, MIDDLEPLAATS 332, KLIPLING 271, HOTAZEL 280, EPSOM 285, TIGERPAN 286, BOTHA 313, MUKULU 265, GLORIA 266, WESSLS 227, GOOLD 329, ADAMS 328, BELGRAVIA 264, MAMATWAN 331, SINTERFONTEIN 784, YORK 279, DEVON 277 AND PERTH 276: WITHIN THE ADMINISTRATIVE DISTRICT OF KURUMAN.

Notice is hereby given in terms of the National Environmental Management Act, 1998 in respect of listed activities that have been triggered by application in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (As Amended).

Activity: Salene Manganese are proposing to conduct prospecting activities for the following minerals: Aluminium, Silver, Arsenic, Barium, Bismuth, Cerium (Rare Earths), Cadmium, Cobalt, Copper, Caesium, Potassium, Lanthanum (Rare Earths), Lithium, Magnesium, Molybdenum, Neodymium (Rare Earths), Nickel, Phosphorus, Lead, Palladium, Platinum, Rubidium, Sulphur, Scandium (Rare Earths), Silicon, Strontium, Tantalum, Titanium, Vanadium, Tungsten, Yttrium, Zinc and Rare Earths. **Please note the following:**

- The minerals Cerium (Rare Earths), Lanthanum (Rare Earths), Neodymium (Rare Earths), Tungsten, Silicon and Rubidium (Rare Earths) are excluded in the following Farms: Olive pan 282, Gama 283, Smartt 314 and Telele 12 as there are already accepted applications for the same minerals and land applied for.
- The minerals Lead, Cobalt, Zinc, Copper and Nickel Ore are excluded in the following: Farm Belgravia 264 as there is already an accepted application for the same minerals and land applied for.

Location: The proposed prospecting activities will be located on the Farms Olive Pan 282, Gama 283, Telele 12, Dikgathlong268, Dibiaghomo 226, Boshof 300, Roldraai 333, Drakenstein 263, East 270, Umtu 281, Olivewood 284, Mooidraai 310, Kongoni 311, Riviera 335, Smartt 314, Middleplaats 332, Klipling 271, Hotazel 280, Epsom 285, Tigerpan 286, Botha 313, Mukulu 265, Gloria 266, Wessels 227, Goold 329, Adams 328, Belgravia 264, Mamatwan 331, 7Sinterfontein 84, York 279, Devon 277 and Perth 276: within the administrative district of Kuruman.

Environmental Authorisation Process: Prescali Environmental Consultants (Pty) Ltd has been appointed to undertake the Environmental Authorisation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) read with the Environmental Impact Assessment Regulations, 2014 as amended in 2017 and 2021. The environmental authorisation application is subject to a Basic Assessment process and will be submitted for approval to the Department of Mineral Resources and Energy (DMRE), Kimberley. Listed activities to be applied for in terms of the NEMA are GNR983 listed activity 20 (prospecting application activities) and GNR983 Listed activity 22 (rehabilitation and closure for prospecting activities).

Public Participation: The purpose of the public participation process is to inform Interested and Affected Parties (IAPs) regarding the proposed prospecting right and environmental authorisation process. IAPs will also be provided with the opportunity to comment on and contribute to the identification of environmental impacts of the proposed activities. Registered IAPs will be granted an opportunity to review and comment on the Draft Basic Assessment/EMPr reports for a period of 30 days.

Public Meeting: Prescali will host an open day in compliance with applicable any regulations that may or may not prohibit large gatherings. Details pertaining to the dates and location of the open days will be forwarded to registered Interested and Affected Parties. The purpose of the open days will be to introduce and discuss the proposed project and any identified environmental impacts.

Should you wish to register as an interested and/or affected party of if you require further information on the abovementioned application and/or proposed project activities; please submit your name, contact information, interest and comments or relevant issues on the matter in writing on or before the 30th of September 2022 to Prescali **Environmental Consultants. Consultants:** Prescali Environmental Consultants (Pty) Ltd. P.O Box 2544, Montana Park, 0159. Tel: 012 543 3808. Fax: 086 621 0294. E-mail: info@prescali.co.za. **For attention:** Dr Petro Erasmus. Reference: NC30/5/1/1/2/13138PR.

Please note: this does not serve as an offer of employment nor guarantee that the project will be implemented.

RUFCO CONSTRUCTION (Pty) Ltd

Registration: 2017/294851/07

Position available for:

CREDITORS CLERK

Requirements:

1. Grade 12 certificate
2. Fluent in English and Afrikaans
3. Good communication skills
4. Must be computer literate (MS Office)
5. Managing administrative tasks
6. Minimum 3 years experience with creditors
7. Medically fit
8. Valid driver's licence will be to your advantage
9. Only local applications will be considered

Opening date: 10 August 2022
Closing date: 02 September 2022

Interested parties should apply in writing to
E-mail: **recruitment@rufco.co.za**

BUSINESS DEVELOPMENT MANAGER

Tectonic Plant Hire, Kathu

Our goal is to assist companies by investing their ESD funding in high potential contractors and mining companies in order to improve their B-BBEE ESD spend. To meet this goal, we require the services of an experienced, dynamic individual, with a track record of converting leads into sales.

The successful candidate will hold a commercial related qualification, 5-7 years sales experience, exposure to the ESD landscape, excellent networking and relationship building capabilities and fluent in Afrikaans and English. Knowledge of construction machinery and the mining industry will be advantageous.

Task requirements include:

- Promoting equipment rental solutions to new customers
- Finding suitable markets and partners to rent our capital equipment to
- Growing and overseeing the equipment fleet
- Promoting enterprise and supplier development funding

Prospective candidates can submit their CV's to **ampatane@innovent.co.za** by **31 August 2022.**

PUBLIC PARTICIPATION CONSULTATION PROCESS FOR ENVIRONMENTAL AUTHORISATION APPLICATION

DMR REFERENCE NUMBER:
NC 30/5/1/1/2/11059 PR / NC00110- PRP/102

Notice is hereby given to the general public in terms of section 16(4)(b) of the MPRDA 2002, Environmental Authorisations in terms of the National Environmental Management Act, (Act No 28 of 2002) (As amended) in respect of listed activities that have been triggered by applications in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (As amended).

Lore Trading and Investments (Pty) Ltd has applied for the prospecting right and has been accepted for Manganese and Iron Ore on Erf 1 situated within the administrative district of Hay in the Northern Cape Province.

Interested and affected parties (I&APs) are invited to provide written comments. I&APs must provide their comments together with their name, contact details (or other interest which they have in the application) to the contact person indicated below within 30 days from the date of this notice.

For more information contact Ms T Manena on the following details: E-mail address: **tshivheaho@gmail.com** Office Number. 072 935 9379. Postal address 27 Old De Beers Road, Kimberley 8301

PUBLIC PARTICIPATION PROCESS THE GRANTING OF ENVIRONMENTAL AUTHORISATION FOR PROSPECTING RIGHT APPLICATION
DMR REFERENCE NUMBER: NC 30/5/1/1/2/12585 PR

The previous correspondence with the respect for the Prospecting Right for Manganese Ore and Iron Ore on the Farm 736 situated within the magisterial district of Kuruman Northern Cape by Maroni Group (Pty) Ltd, refers.

The applicant (Maroni Group Pty) Ltd) hereby inform that the Environmental Authorisation in terms of section 16(4)(b) of the MPRDA 2002, Environmental Authorisations in terms of the National Environmental Management Act, (Act No.28 of 2002) (As amended) in respect of listed activities that have been triggered by applications in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (As amended) has been granted.

Should you wish to appeal any aspects of the decision, you have to submit the appeal to the Minister of Environmental Affairs within 20 days from date of notification, and such appeal must be lodged as stated on Chapter 2 of the National Appeal Regulation of 2014 by means of the following methods:

Appeal to the Department of Environmental Affairs
Attention : Directorate Appeals and Legal Review
E-mail : appealsdirectorate@environment.gov.za
By Post : Private Bag X447, Pretoria, 0001
By Hand: Environmental House, Corner Steve Biko and Soutpansberg Street, Arcadia, Pretoria, 0083

Copy of the lodged appeal to be sent to Department of Mineral Resources
Attention : Regional Manager, Northern Cape Region
By facsimile : 053 832 5671
E-mail : Ntombi.mayekiso@dmr.gov.za
By Post : Private Bag X 6093, Kimberley 8300
By Hand: Telkom Building, 41 Schmidtsdrift Street, Kimberley, 8301

For more information contact Ms Tshivheaho Manena on the following details:
E-mail Address: tshivheaho@gmail.com
Office Number: 072 935 9379.
Postal address: 27 De Beers Road, Kimberley 8301

NOTICE ISSUED IN TERMS OF REGULATION 4(2)

OF THE EIA REGULATION, REGARDING THE APPROVED ENVIRONMENTAL AUTHORISATION FOR THE REMAINING EXTENT OF PORTION 4 OF THE FARM GROENWATER NO 453 WITHIN THE MAGISTERIAL DISTRICT OF POSTMASBURG, NORTHEN CAPE
DMR REF: NC 30/5/1/3/2/10444 MP

METSI MATALE MINING AND PROJECTS (PTY) LTD have been granted an Environmental Authorisation for application of Mining permit to mine Gemstones (Jasper) issued by the Department of Mineral Resources (DMR).

REASONS FOR THE DECISION
In reaching the decision the department looked into the following consideration:

(a) A public participation processes (PPP) was undertaken and the Applicant has satisfied the minimum requirement as prescribed in the NEMA EIA 2014 regulations for Public involvement
(b) The environmental impacts associated with the proposed mitigation measures as outlined in the BAR
(c) The closure and rehabilitation is included in the BAR.
(d) The environmental emergencies procedure is included in the BAR
(e) The environmental awareness plan is included in the BAR
(f) The quantum calculation of the financial provision for rehabilitation of the prospecting activities is included in the BAR.

NOTICE OF INTENTION TO APPEAL:
An appeal can be lodged against the decision as stipulated in the National Appeals Regulations of 2014 should you wish to appeal. The appeal must be lodged within 20 days from the receipt of the notification to the Minister of Environmental Affairs. The appeal must be lodged as prescribed in the National Appeal Regulations of 2014 by means of the following methods;

Appeal to the Department of Environmental Affairs: Attention: Directorate Appeals and legal review E-mail: **appealsdirector-ate@environment.gov.za** By post: Private bag x 447, Pretoria,0001

By hand: Environmental House, corner of Steve Biko and Soutpansberg Street, Arcadia, Pretoria, 0083. Copy of the lodged appeal to the Department of Mineral Resources

Attention: Regional Manager: Northern Cape Region
E-mail: **ndlelenhle.zindela@dmre.gov.za**
Postal Address: Private Bag X6093, Kimberley, 8300
Notice Date: **19 August 2022**

SEGOKAKU TRANSPORT

ADVERTISEMENT:

Health and Safety Officer/Supervisor

Segokaku Transport (Pty) Ltd
Kuruman, Northern Cape

Job Type
Health and Safety Officer in the Transport and mining industry

Minimum Qualifications and Requirements

- Matric certificate
- SAMTRAC
- 3-5 years mining and transport experience
- Experience with HSEC
- Knowledge of OHS Act
- Registered with SACPCMP
- 2 years administrative experience
- Code B driver's Licence
- Computer literate (MS Word, Ms Excel and Outlook)
- First Aid and Fire Fighting Training and field experience will be advantageous

Please read the qualifications for this position carefully. Only applicants meeting the criteria outlined above will be contacted as part of the short-listing process.

Segokaku Transport reserves the right to make no appointment for this position should no suitable candidate be identified. Closing date for applications **9 September 2022**. Applications can be sent to **hr@segokaku.co.za**

If you have not heard anything within a week after the closing date, please accept your application as unsuccessful.

The following must be attached to your application:

- CV, certificates of all training, copy of driver's licence

PUBLIC PARTICIPATION NOTIFICATION OF AN ENVIRONMENTAL IMPACT ASSESSMENT APPLICATION (BASIC ASSESSMENT PROCESS FOR A PROSPECTING RIGHT) IN TERMS OF SECTION 16 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002) AS AMENDED BY SECTION 12 OF THE ACT NO. 49 OF 2008: ON THE FARMS OLIVE PAN 282, GAMA 283, TELELE 12, DIKGATHLONG 268, DIBIAGHOMO 226, BOSHOF 300, ROLDRAAI 333, DRAKENSTEIN 263, EAST 270, UMTU 281, OLIVEWOOD 284, MOOIDRAAI 310, KONGONI 311, SMARTT 314, MIDDLEPLAATS 332, KLIPLING 271, HOTAZEL 280, EPSOM 285, TIGERPAN 286, BOTHA 313, MUKULU 265, GLORIA 266, WESSLS 227, ADAMS 328, BELGRAVIA 264, MAMATWAN 331, SINTERFONTEIN 784, YORK 279, DEVON 277 AND PERTH 276: WITHIN THE ADMINISTRATIVE DISTRICT OF KURUMAN.

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Activity: Salene Manganese are proposing to conduct prospecting activities for the following minerals: Aluminium, Silver, Arsenic, Barium, Bismuth, Cerium (Rare Earths), Cadmium, Cobalt, Copper, Caesium, Potassium, Lanthanum (Rare Earths), Lithium, Magnesium, Molybdenum, Neodymium (Rare Earths), Nickel, Phosphorus, Lead, Palladium, Platinum, Rubidium, Sulphur, Scandium (Rare Earths), Silicon, Strontium, Tantalum, Titanium, Vanadium, Tungsten, Yttrium, Zinc and Rare Earths. Please note the following:

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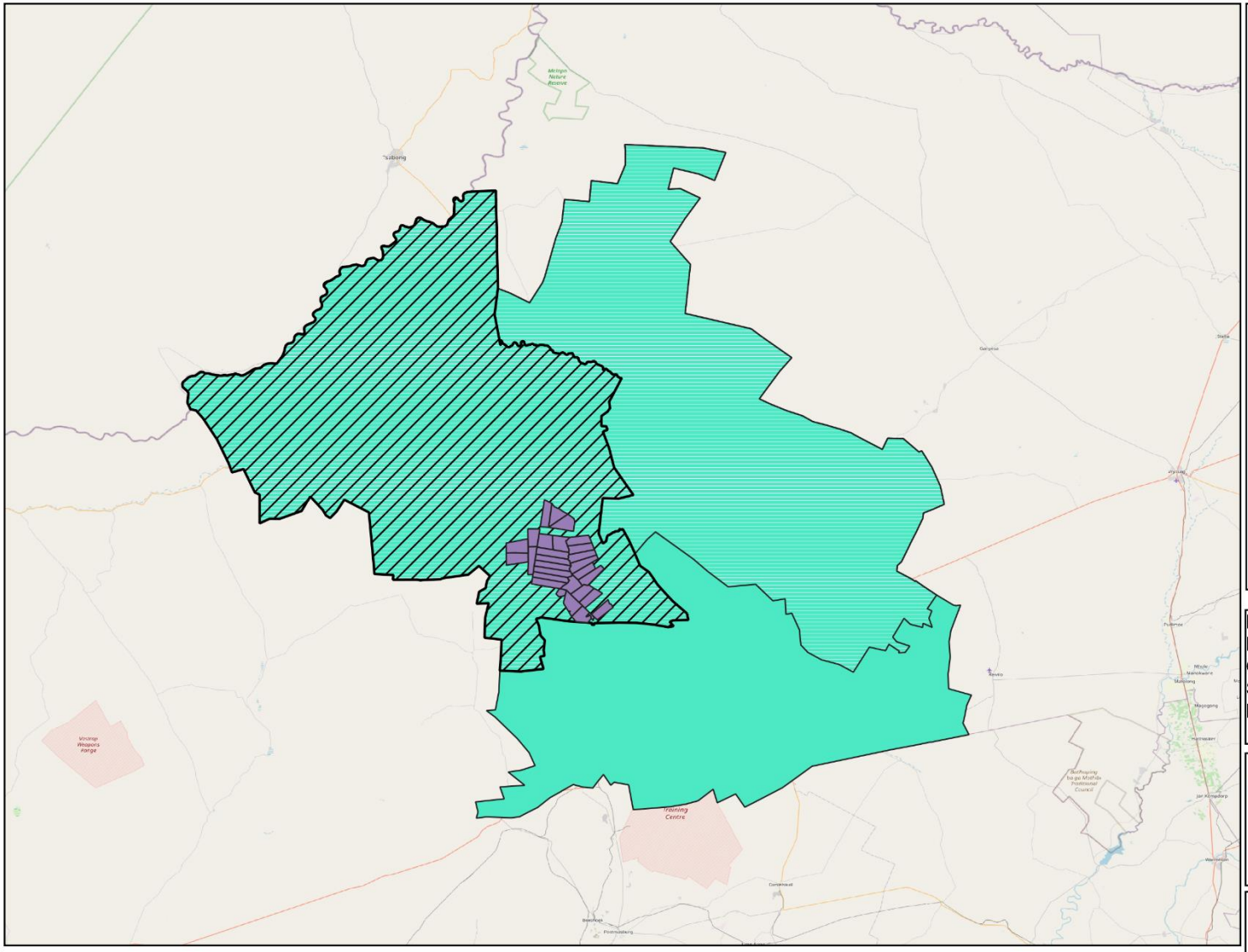
Should you wish to register as an interested and/or affected party of if you require further information on the abovementioned application and/or proposed project activities; please submit your name, contact information, interest and comments or relevant issues on the matter in writing on or before the 30th of September 2022 to Prescali Environmental Consultants.

Consultants: Prescali Environmental Consultants (Pty) Ltd. P.O Box 2544, Montana Park, 0159. Tel: 012 543 3808. Fax: 086 621 0294. Email: info@prescali.co.za. For attention: Dr Petro Erasmus. Reference: NC30/5/1/1/2/13138PR

Please note: this does not serve as an offer of employment nor guarantee that the project will be implemented.



Legend

Client

Parent Farms

Municipal Demarcation Board

Ward 4

LocalMunicipalities2018_Final

Joe Morolong

DistrictMunicipalities2018_Final

John Taolo Gaetsewe

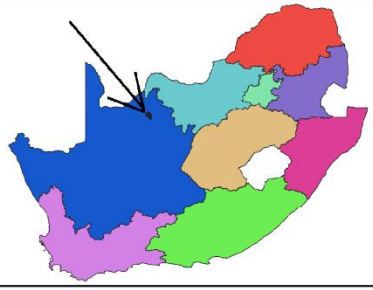
group4

OpenStreetMap

25 0 25 50 km

Programme: QGIS Lorem ipsum
Date: 25 August 2022
Compiler: Dr Petro Erasmus
Sources: Applicant; Municpal Demarcation Board

Prescali Environmental Consultants (Pty) Ltd
PO Box 2544
Montana Park
0159
(t) 012 543 3808
(f) 086 621 0294
info@prescali.co.za



Salene Manganese (Pty) Ltd
NC30/5/1/1/2/13138 PR
Municipal Boundaries

SALENE MANGANESE (PTY) LTD (NC30/5/1/1/2/13138PR)			
REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES			
DATE			
PARTICULARS OF THE INTERESTED AND AFFECTED PARTY			
NAME			
POSTAL ADDRESS			
		POSTAL CODE	
STREET ADDRESS			
		POSTAL CODE	
WORK/ DAY TELEPHONE NUMBER		**WORK/ DAY FAX NUMBER**	
CELL PHONE NUMBER		**E-MAIL ADDRESS**	
PLEASE IDENTIFY YOUR INTEREST IN THE PROJECT:			
PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:			
Please return completed forms before or on 30 September 2022 to:			
Consultants: Prescali Environmental Consultants (Pty) Ltd P.O. Box 2544, Montana Park, 0159 Tel: 012 543 3808, Fax 086 621 0294, Email: info@prescali.co.za **Attention:** Dr Petro Erasmus **Reference:** NC30/5/1/1/2/13138PR			

PUBLIC PARTICIPATION NOTIFICATION OF AN ENVIRONMENTAL IMPACT ASSESSMENT APPLICATION (BASIC ASSESSMENT PROCESS FOR A PROSPECTING RIGHT) IN TERMS OF SECTION 16 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002) AS AMENDED BY SECTION 12 OF THE ACT NO. 49 OF 2008: ON THE FARMS OLIVE PAN 282, GAMA 283, TELELE 12, DIKGATHLONG 268, DIBIAGHOMO 226, BOSHOF 300, ROLDRAAI 333, DRAKENSTEIN 263, EAST 270, UMTU 281, OLIVEWOOD 284, MOOIDRAAI 310, KONGONI 311, RIVIERA 335, SMARTT 314, MIDDLEPLAATS 332, KLIPLING 271, HOTAZEL 280, EPSOM 285, TIGERPAN 286, BOTHA 313, MUKULU 265, GLORIA 266, WESSLS 227, GOOLD 329, ADAMS 328, BELGRAVIA 264, MAMATWAN 331, SINTERFONTEIN 784, YORK 279, DEVON 277 AND PERTH 276: WITHIN THE ADMINISTRATIVE DISTRICT OF KURUMAN.

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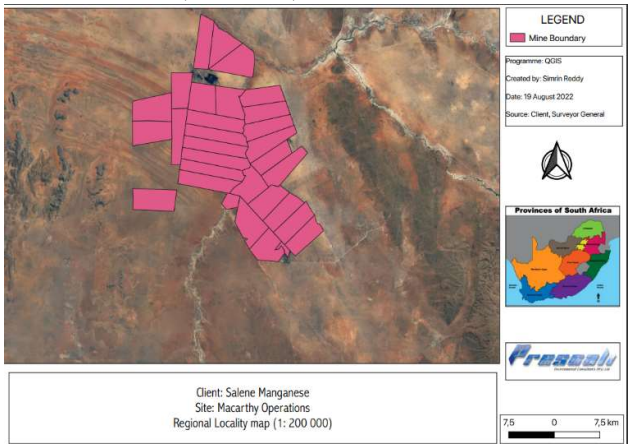
- The minerals Lead, Cobalt, Zinc, Copper and Nickel Ore are excluded in the following: Farm Belgravia 264 as there is already an accepted application for the same minerals and land applied for.

Location: The proposed prospecting activities will be located on the Farms Olive Pan 282, Gama 283, Telele 12, Dikgathlong268, Dibiaghomo 226, Boshof 300, Roldraai 333, Drakenstein 263, East 270, Umtu 281, Olivewood 284, Mooidraai 310, Kongoni 311, Riviera 335, Smartt 314, Middleplaats 332, Klipling 271, Hotazel 280, Epsom 285, Tigerpan 286, Botha 313, Mukulu 265, Gloria 266, Wessels 227, Goold 329, Adams 328, Belgravia 264, Mamatwan 331, 7Sinterfontein 84, York 279, Devon 277 and Perth 276: within the administrative district of Kuruman.



Environmental Authorisation Process: Prescali Environmental Consultants (Pty) Ltd has been appointed to undertake the Environmental Authorisation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) read with the Environmental Impact Assessment Regulations, 2014 as amended in 2017 and 2021. The environmental authorisation application is subject to a Basic Assessment process and will be submitted for approval to the Department of Mineral Resources and Energy (DMRE), Kimberly. Listed activities to be applied for in terms of the NEMA are GNR983 listed activity 20 (prospecting application activities) and GNR983 Listed activity 22 (rehabilitation and closure for prospecting activities).

Public Participation: The purpose of the public participation process is to inform Interested and Affected Parties (IAPs) regarding the proposed prospecting right and environmental authorisation process. IAPs will also be provided with the opportunity to comment on and contribute to the identification of environmental impacts of the proposed activities. Registered IAPs will be granted an opportunity to review and comment on the Draft Basic Assessment/EMPr reports for a period of 30 days.

Public Meeting: Prescali will host an open day in compliance with applicable any regulations that may or may not prohibit large gatherings. Details pertaining to the dates and location of the open days will be forwarded to registered Interested and Affected Parties. The purpose of the open days will be to introduce and discuss the proposed project and any identified environmental impacts.

Should you wish to register as an interested and/or affected party of if you require further information on the abovementioned application and/or proposed project activities; please submit your name, contact information, interest and comments or relevant issues on the matter in writing on or before the 30th of September 2022 to Prescali Environmental Consultants.

Consultants: Prescali Environmental Consultants (Pty) Ltd. P.O Box 2544, Montana Park, 0159. Tel: 012 543 3808. Fax: 086 621 0294. Email: info@prescali.co.za. For attention: Dr Petro Erasmus. Reference: NC30/5/1/1/2/13138PR

Please note: this does not serve as an offer of employment nor guarantee that the project will be implemented.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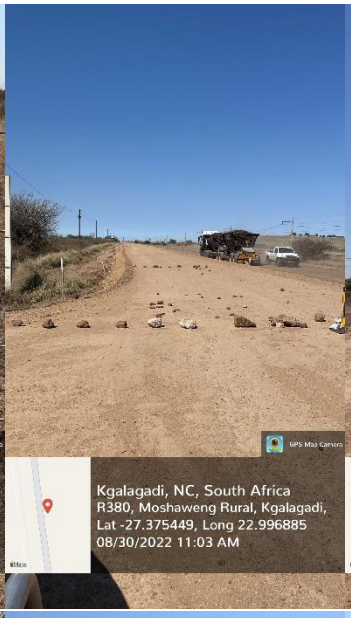
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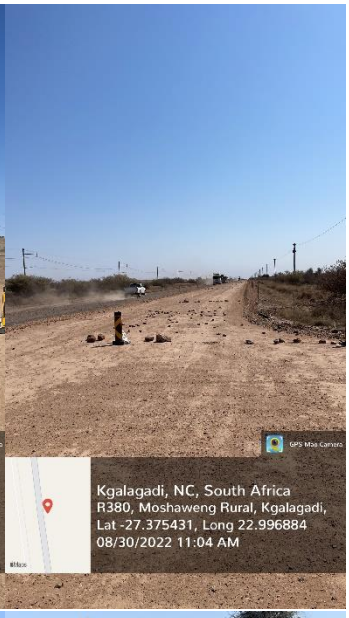
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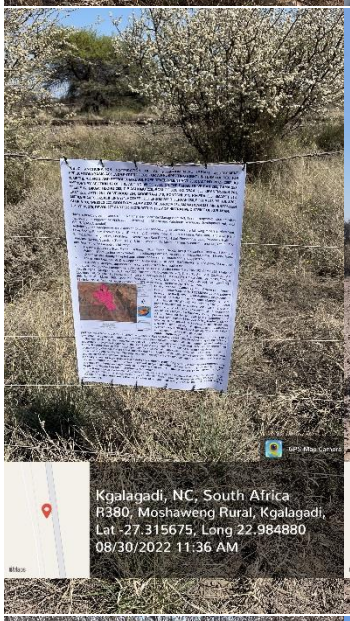
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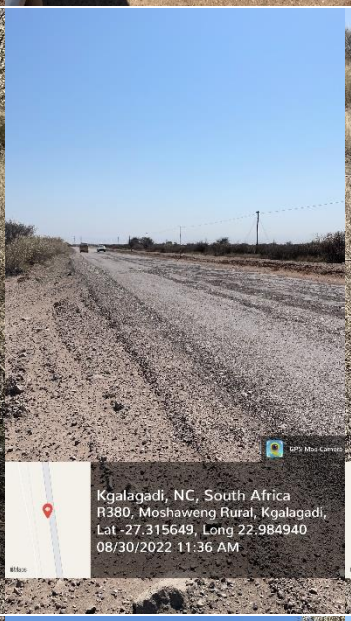
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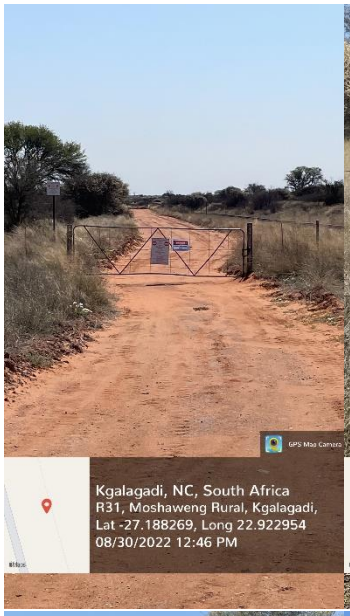
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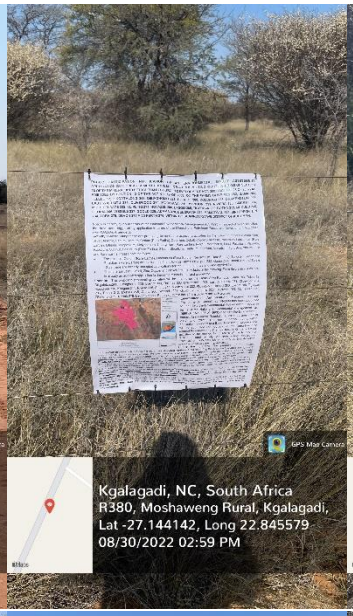
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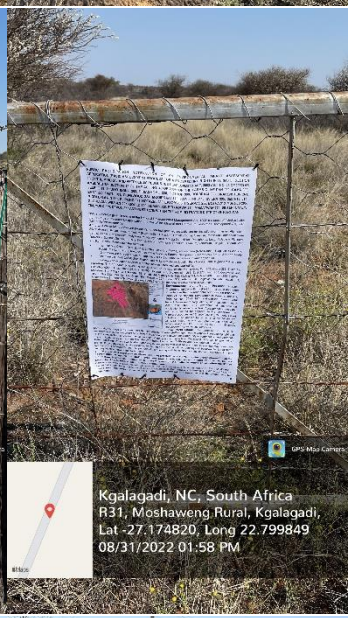
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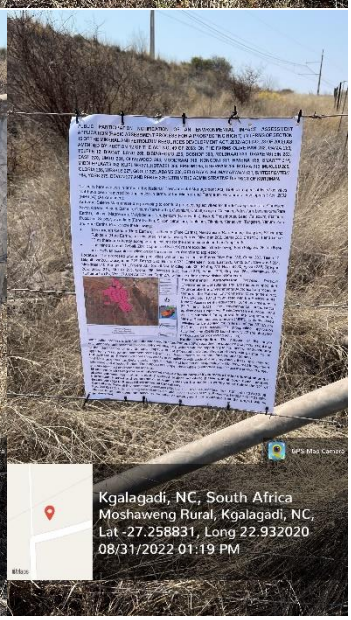
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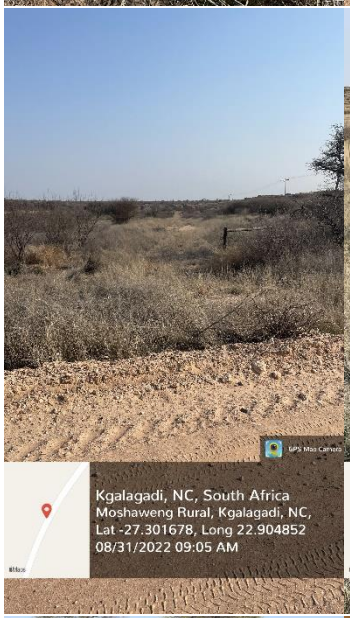
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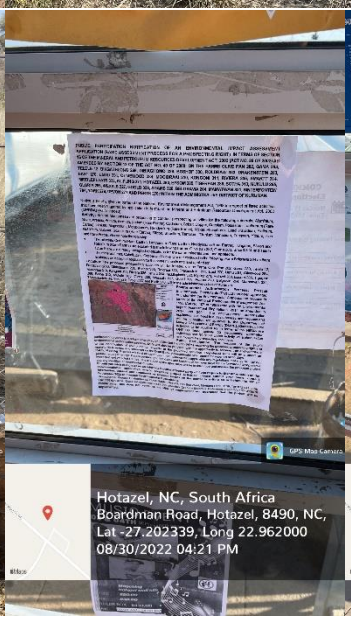
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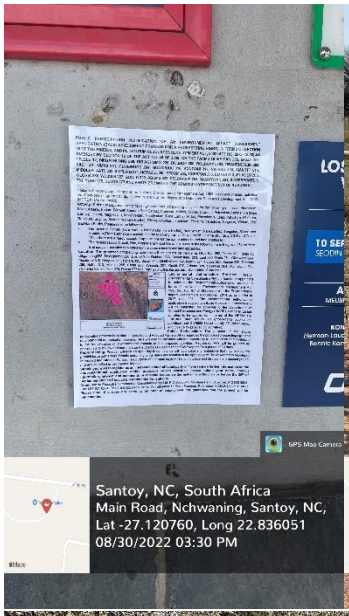
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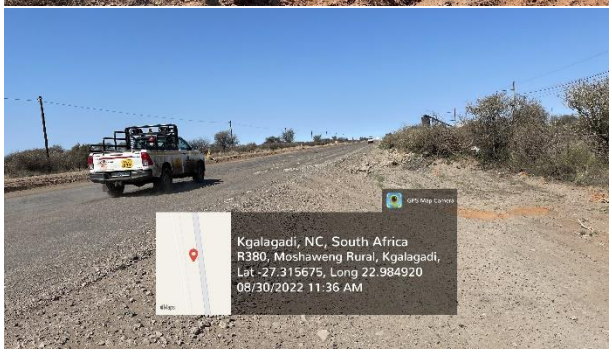
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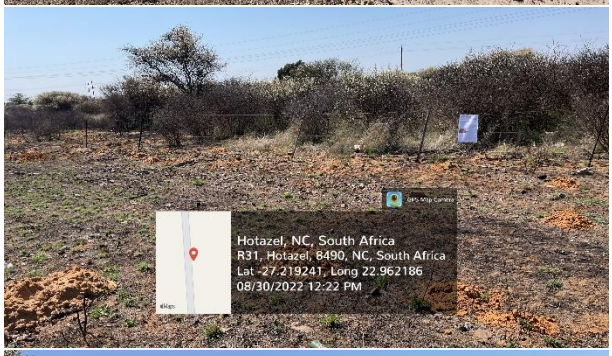
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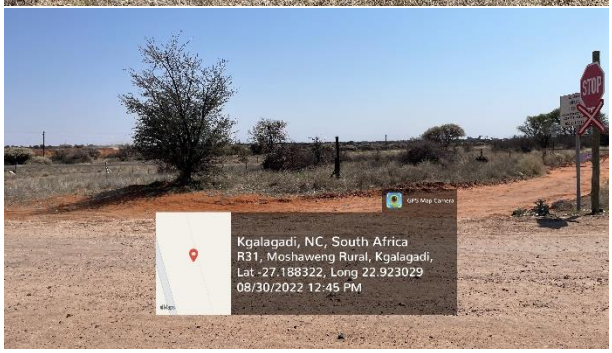
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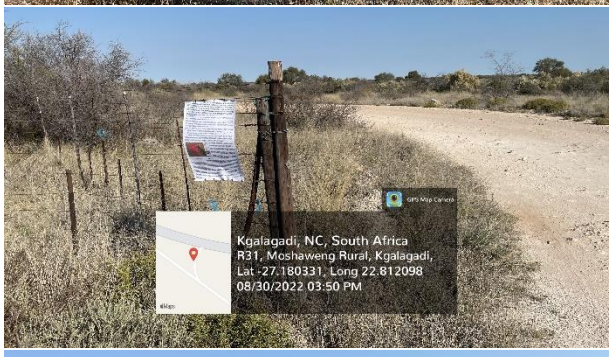
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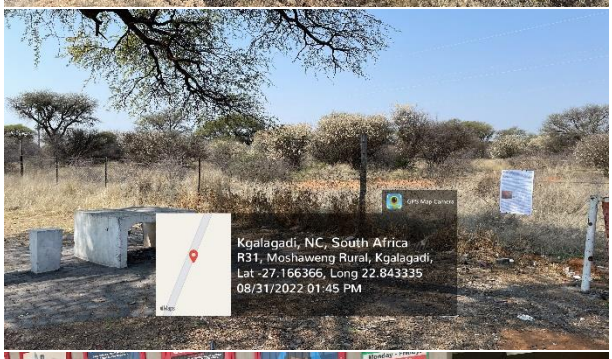
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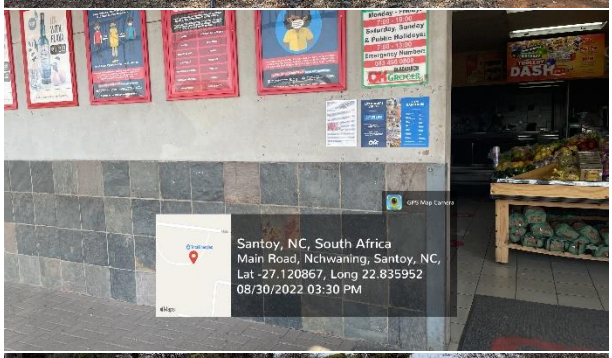
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Appendix 7. 3: Proof of consultation:

- **IAP Notification (Post / Fax / Email / Hand delivered Notifications)**
- **Draft Basic Assessment distribution / Open day meeting invitation and confirmation**

To protect Personal Information this information will only be provided to the DMRE

Appendix 7. 4: Formal letters or Registration as I&AP received

To protect Personal Information this information will only be provided to the DMRE

Appendix 7. 5: Meetings

In Progress

Appendix 8: ESKOM requirements

TO WHOM IT MAY CONCERN

Eskom requirements for work in or near Eskom servitudes.

1. Eskom's rights and services must be acknowledged and respected at all times.

2. Eskom shall at all times retain unobstructed access to and egress from its servitudes.

3. Eskom's consent does not relieve the developer from obtaining the necessary statutory, land owner or municipal approvals.

4. Any cost incurred by Eskom as a result of non-compliance to any relevant environmental legislation will be charged to the developer.

5. If Eskom has to incur any expenditure in order to comply with statutory clearances or other regulations as a result of the developer's activities or because of the presence of his equipment or installation within the servitude restriction area, the developer shall pay such costs to Eskom on demand.

6. The use of explosives of any type within 500 metres of Eskom's services shall only occur with Eskom's previous written permission. If such permission is granted the developer must give at least fourteen working days prior notice of the commencement of blasting. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued in terms of the blasting process. It is advisable to make application separately in this regard.

7. Changes in ground level may not infringe statutory ground to conductor clearances or statutory visibility clearances. After any changes in ground level, the surface shall be rehabilitated and stabilised so as to prevent erosion. The measures taken shall be to Eskom's satisfaction.

8. Eskom shall not be liable for the death of or injury to any person or for the loss of or damage to any property whether as a result of the encroachment or of the use of the servitude area by the developer, his/her agent, contractors, employees, successors in title, and assignees. The developer indemnifies Eskom against loss, claims or damages including claims pertaining to consequential damages by third parties and whether as a result of damage to or interruption of or interference with Eskom's services or apparatus or otherwise. Eskom will not be held responsible for damage to the developer's equipment.

9. No mechanical equipment, including mechanical excavators or high lifting machinery, shall be used in the vicinity of Eskom's apparatus and/or services, without prior written permission having been granted by Eskom. If such permission is granted the developer must give at least seven working days' notice prior to the commencement of work. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued by the relevant Eskom Manager

Note: Where and electrical outage is required, at least fourteen work days are required to arrange it.

10. Eskom's rights and duties in the servitude shall be accepted as having prior right at all times and shall not be obstructed or interfered with.

11. Under no circumstances shall rubble, earth or other material be dumped within the servitude restriction area. The developer shall maintain the area concerned to Eskom's satisfaction. The developer shall be liable to Eskom for the cost of any remedial action which has to be carried out by Eskom.

12. The clearances between Eskom's live electrical equipment and the proposed construction work shall be observed as stipulated by *Regulation 15* of the *Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).*

13. Equipment shall be regarded electrically live and therefore dangerous at all times.

14. In spite of the restrictions stipulated by Regulation 15 of the Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), as an additional safety precaution, Eskom will not approve the erection of houses, or structures occupied or frequented by human beings, under the power lines or within the servitude restriction area.

15. Eskom may stipulate any additional requirements to highlight any possible exposure to Customers or Public to coming into contact or be exposed to any dangers of Eskom plant.

16. It is required of the developer to familiarise himself with all safety hazards related to Electrical plant.

17. Any third party servitudes encroaching on Eskom servitudes shall be registered against Eskom's title deed at the developer's own cost. If such a servitude is brought into being, its existence should be endorsed on the Eskom servitude deed concerned, while the third party's servitude deed must also include the rights of the affected Eskom servitude.

John Geeringh (Pr Sci Nat)(EAPASA)
Senior Consultant Environmental Management
Eskom Transmission Division: Land & Rights
Megawatt Park, D1Y42, Maxwell Drive, Sunninghill, Sandton.
P O Box 1091, Johannesburg, 2000.
Tel: 011 516 7233
Cell: 083 632 7663
Fax: 086 661 4064
E-mail: john.geeringh@eskom.co.za