mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

DRAFT OF THE BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL 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: EPANG BASE MINERALS (PTY) LTD

REFERENCE NUMBER: NC 30/5/1/1/2/14779 PR

PROJECT NAME: Epang Uranium Project

DATE: 17 April 2026

TEL NO: 011 234 4900

CELL NO: 065 919 2578

POSTAL ADDRESS: PO Box 52795; Saxonwold; 2132

PHYSICAL ADDRESS: 5 Jellicoe Avenue; Rosebank; 2193

FILE REFERENCE NUMBER SAMRAD: NC 30/5/1/1/2/14779 PR

A. 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 other the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorization can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in term so 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 authorization for listed activities triggered by an application for a right or a permit submitted in the exact format of, and provide all information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorization being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings 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.

B. 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 the 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 –
        - Can be reversed
        - May cause irreplaceable loss of resources; and
        - Can be managed, avoided or mitigated.
(e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –
    i. Identify and motivate a preferred site, activity and technology alternative;
    ii. Identify suitable measures to manage, avoid or mitigate identified impacts; and
    iii. Identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

C. Contact details of

a. Details of

i. Compiler:

Name: Noluthando Mlaba

Tel No: 065 919 2578

Email address: thandzmlaba@motjolims.com

ii. Public Participation Process:

Name: Werner Riekert

Tel No: 065 919 2578

Email address: wernerriekert@gmail.com

iii. EAP:

Name: Riel Pieter Colyns

Email address: rpcolyn@telkomsa.net

Summary of the EAP's past experience
(in carrying out the Environmental Impact Assessment Procedure)

Core competence and area of expertise of EAP:

- Application for Prospecting and Mining Rights
- Compilation of Prospecting and Mine Work Programme
- Project Management
- Field exploration
- Compilation of GIS maps and modelling
- Compilation the EMP/ Basic Assessment Report
- Compilation of Scoping Report
- Compilation of Environmental Impact Assessments and Management Plan Report
- Lead Public Participation Processes
- Closure certificate application

1. LOCATION OF THE OVERALL ACTIVITY.

Farm Names:	Aasvoëlkrans 262, Biesjesfontein 218, Windhoek 264, Waterhoek 636, Waterhoek 252, Vogelklip 265, Speelhoek 253, Ou Hoek 263, Farm 260, Droogedaap 255, Drogedap 258, Deur Drift 219 and Dansekraal 217 (Portions RE, RE 2, 3 and 5).
Application area (Ha)	Approximately 31 936 Ha
Magisterial district:	The application site falls within Nama Khoi Local Municipality of the Namakwa District Municipality, Northern Cape Province.
Distance and direction from nearest town	The application area is located approximately 2km south of the Town Springbok in the Northern Cape Province.
21 digit Surveyor General Code for each farm portion	C05300000000026200000 C05300000000021800000 C05300000000026400000 C05300000000063600000 C05300000000025200000 C05300000000026500000 C05300000000025300000 C05300000000026300000 C05300000000026000000 C05300000000025500000 C05300000000025800000 C05300000000021900000 C05300000000021700000 C05300000000021700002 C05300000000021700003 C05300000000021700005
Locality map	Attach a locality map at a scale **not smaller than 1: 250 000**

2. LOCALITY MAP.

(Show nearest town, scale 1:250 000)

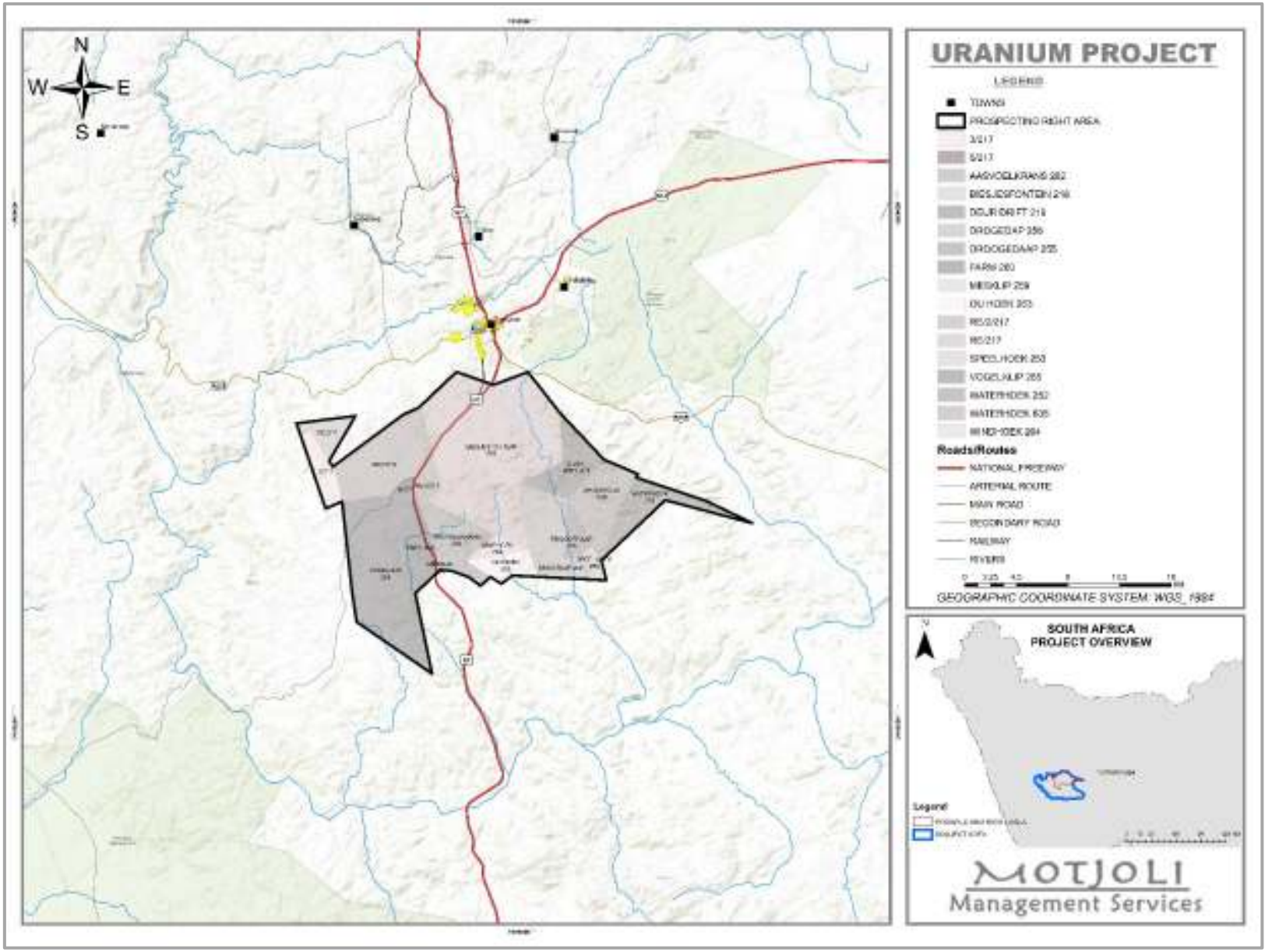


Figure A.1: Locality Map

3. 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)

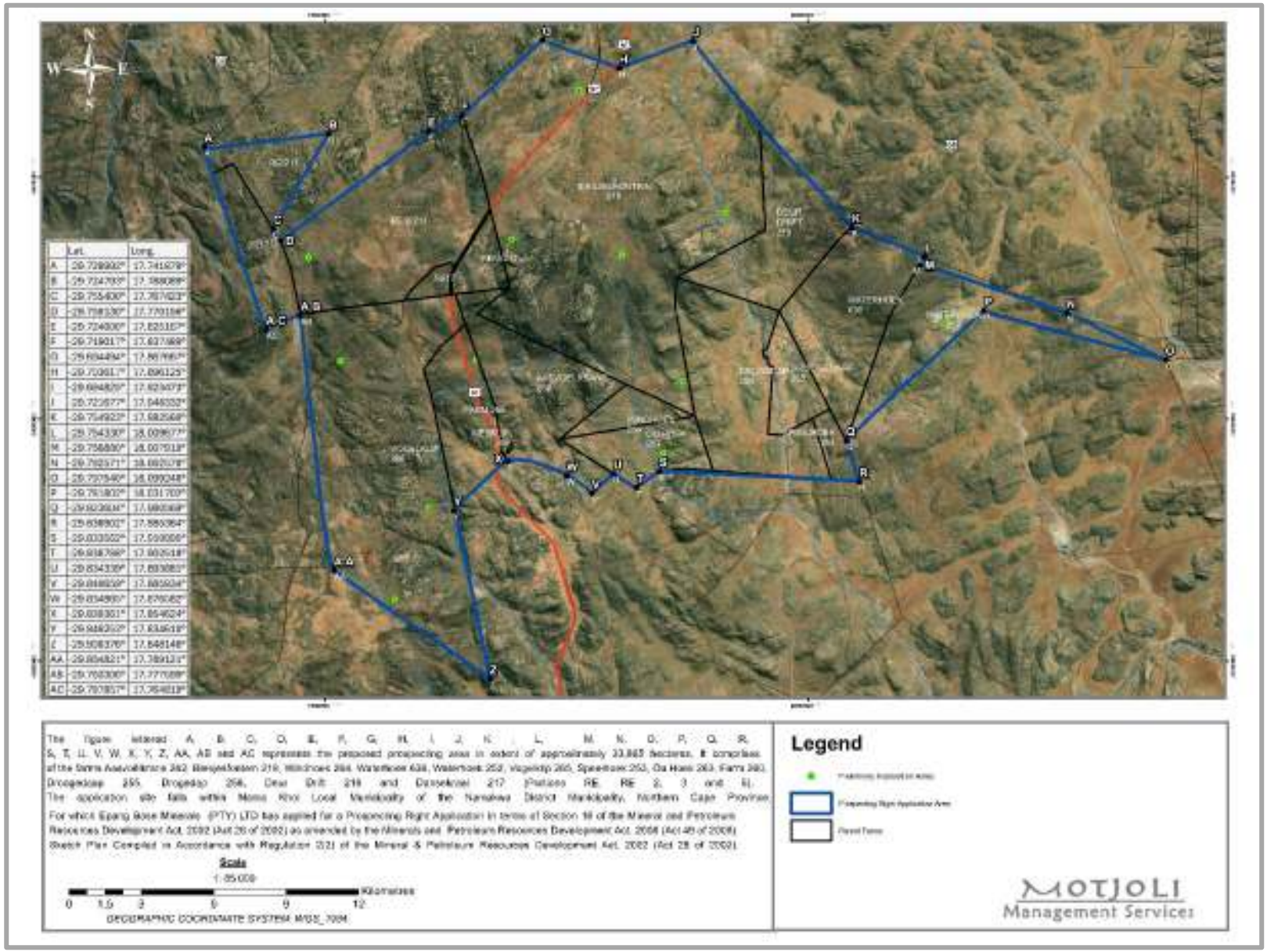


Figure A.2: Preliminary Regulation 2(2) Map

4. LISTED AND SPECIFIED ACTIVITIES

NAME OF ACTIVITY **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc**	**Aerial extent of the Activity** (Ha or m²)	**LISTED ACTIVITY** (Mark with an **X** where applicable or affected).	**APPLICABLE LISTING NOTICE** *(GNR 324, GNR 325 or GNR 327)*	**WASTE MANAGEMENT AUTHORISATION** (Indicate whether an authorisation is required in terms of the Waste Management Act). **(Mark with an X)**
Prospecting Activities (Drilling Only)	0.2 ha	X	Activity 20 of GNR 327	
The clearance of an area of 300 square metres or more of indigenous vegetation (Drill site)	0.05 ha	X	Activity 12 (ii) of GNR 324, listing notice 3	

5. DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

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

Prospecting activities will commence immediately after the prospecting right has been granted to Epang Base Minerals (Pty) Ltd (Epang). The different phases associated with the Prospecting Work Programme are listed below and described detail.

Exploration

Five phases are planned in the Prospecting Work Program although Epang will target the completion of the prospecting program in less time than the planned five years, if possible. If for any unforeseen reason the prospecting period takes longer than expected, the applicant will inform the Department of Mineral and Petroleum Resources in writing and to request an extension of the prospecting period, which is five years.

If results are positive and a feasibility study completed the applicant will then immediately submit an application for a mining right.

Development Phases

The prospecting program to investigate the presence and quantities of the deposits will be conducted in 5 phases (year 1 to 5):

Phase 1 (Months 1–12):

The first phase focuses on early-stage prospecting through desktop-based and field investigations. Activities include desktop studies and GIS analysis, compilation of existing geological data, and fieldwork involving geological mapping. This information is then analysed and compiled into a formal report. The main requirement for this phase is a geologist, who will interpret the data and produce geological maps and a technical report. The outcome is a foundational understanding of the area's geology to guide further exploration.

Phase 2 (Months 12–24):

The second phase advances into physical exploration through diamond drilling and sampling. Drill cores are collected and analysed to obtain detailed subsurface information. Data from drilling is compiled, interpreted, and reported on. This phase requires both a drilling contractor and a geologist to oversee operations and interpret results. The outputs include drill core data, analytical results, updated geological plans and sections, and a comprehensive exploration report, providing a clearer picture of the mineral potential.

Phase 3 (Months 24–36):

In this phase, the focus shifts to modelling and resource estimation. A 3D geological model is developed using the data gathered in earlier phases, followed by the estimation of mineral resources. Reporting consolidates these findings into a formal technical document. This phase requires a multidisciplinary team, including a geologist, engineers, and an economist. The outcome is a quantified mineral resource estimate and a technical report supporting the viability of the deposit.

Phase 4 (Months 36–48):

Phase four centres on evaluating how the resource can be mined and processed. Activities include additional sampling, metallurgical test work to determine metal recovery rates, and preliminary geotechnical studies to assess ground stability. This phase requires a geologist, engineer, and metallurgist. The results include detailed reports on metal recovery and geotechnical conditions, which are critical for determining mining methods and processing options.

Phase 5 (Months 48–60):

The final phase involves a scoping study to assess the overall technical and economic viability of the project. It integrates all previous findings into a high-level evaluation of potential mining operations. This phase requires input from a geologist, engineers, an economist, and a metallurgist. The main output is a technical report that outlines whether the project is feasible and worth advancing to more detailed feasibility studies.

A preliminary Social and Labour Plan (SLP) and application for a mining right can be compiled and submitted.

6. POLICY AND LEGISLATIVE CONTEXT

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT *(a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)*	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** *(E.g. in terms of the National Water Act a Water Use License has/has not been applied for)*
National Environmental Management Act (NEMA), No. 107 of 1998, as amended.	Section 24	In terms of the National Environmental Management Act, an Environmental Authorization has been applied for.
National Environmental Management Act (Act No. 107 of 1998): Environmental Impact Assessment Regulations, 2014	Regulation 19	In terms of the NEMA EIA Regulations a Basic Assessment Report (BAR) and Environmental Management Programme (EMPr) were prepared to submit to the competent authority.
National Environmental Management Act 1998, (Act 107 of 1998)	Regulation 20	In terms of NEMA EIA Regulations GNR 327, Listing notice 1, Activity 20 which triggers prospecting right application.

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)

Although the project is currently in the exploration phase, progression to the mining right phase could result in several potential benefits. These may include increased employment opportunities and enhanced economic activity within the area. Such development could contribute to the improvement of local infrastructure and services in nearby towns and surrounding communities, ultimately supporting greater socio-economic stability.

8. MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE.

The study area is predominantly underlain by natural vegetation, with current and potential alternative land uses including grazing and limited agricultural activities, consistent with its grassland setting. However, the area is considered highly prospective for economically significant mineralisation, specifically Lithium (Li), Tantalum (Ta), Niobium (Nb), Rare Earth Elements (REE), Uranium (U), and associated minerals typically hosted within LCT (Lithium-Cesium-Tantalum) and NYF (Niobium-Yttrium-Fluorine) pegmatite systems.

The presence of these strategic and critical minerals provides a strong motivation for the preferred site, as they are essential for modern technologies, including renewable energy systems, energy storage solutions, advanced electronics, and various industrial applications. Their potential extraction and beneficiation could contribute meaningfully to regional and national economic development, support the transition to a low-carbon economy, and enhance South Africa's participation in the global critical minerals market.

The proposed prospecting activities, which are limited in scale and include drilling and minimal vegetation clearance, have been designed to reduce environmental disturbance while effectively evaluating the mineral resource potential. The selected technologies are standard for early-stage exploration and are considered appropriate given the geological context and the need for accurate subsurface data.

9. FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE.

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

i. Details of the development footprint alternatives considered.

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

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

Alternative of placing the borehole will be done in consultation with geological information and biodiversity.

10. PUBLIC PARTICIPATION PROCESS

i. 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 attend 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).

Definitions:

'consultation' means a two-way communication process between the applicant and the community or interested and affected party wherein the former is seeking, listening to, and considering the latter's response, which allows openness in the decision making process.

'community' means a group of historically disadvantaged persons with interest or rights in a particular area of land on which the members have or exercise communal rights in terms of an agreement, custom or law: Provided that, where as a consequence of the provisions of the Act negotiations or consultations with the community are required, the community shall include the members or part of the community, directly affected by mining or mining, on land occupied by such members or part of the community.

'Interested and affected' parties include, but are not limited to; –

- Host Communities
- Landowners (Traditional and Title Deed owners)
- Traditional Authority
- Land Claimants
- Lawful land occupier
- The Department of Land Affairs,
- Any other person (including on adjacent and non-adjacent properties) whose socio-economic conditions may be directly affected by the proposed prospecting or prospecting operation
- The Local Municipality,
- The relevant Government Departments, agencies and institutions responsible for the various aspects of the environment which may be affected by the proposed project.

The identified I&APs were provided with information regarding the planned prospecting right information (background information). The final location of the planned boreholes will be decided in consultation with the landowners during exploration. All comments from the identified I&APs are noted and taken into consideration and incorporated in the final basic assessment report.

After the directly affected landowners and/or land occupiers are identified, these parties will be consulted per email/post, site notice and newspaper (whichever method is most convenient for the party concerned).

Site notices were placed at the farm gate of the study site and in various other places in and surrounding the site as seen. An advertisement notice of the project, inviting people to provide comments and/or concerns, was placed within a local newspaper (Die Plattelander) on the 17 April 2026.

Description of the existing status of the environment (including cultural, socio-economic and biophysical):

- Inform the description of the existing status of the environment
- Agree with the description of the existing status of the environment

Anticipated environmental, social or cultural impacts:

- Inform the list of potential impacts
- Agree with the list of potential impacts

Land use and development:

- List and describe any land developments that are in progress and may be affected by the prospecting.

The public participation process mainly comprises engagement with Interested and Affected Parties (I&APs) and is of utmost importance in any environmental assessment process. The public participation process, inter alia, involves the following:

Inform, raise awareness, educate and increase understanding of a broad range of environmental issues that might be affected by the proposed prospecting operations.

- Establish lines of communication between stakeholders, I&APs and the project team.
- Provide opportunity to all parties for the exchange of information and expression of views and concerns.
- Obtain contributions of stakeholders and I&APs and ensure that all views, issues, concerns and queries raised are fully documented.
- Identify all the significant issues associated with the proposed project

Environmental Hydrological Solution s(Pty) Ltd was appointed by Epang Base Minerals (Pty) Ltd as the independent consultant to conduct the public participation process as part of the Basic Assessment Report and Environmental Management Programme Report. As stipulated in Section 16 of the MPRDA (Act 28 of 2002) as amended by the MPRDA (Act 49 of 2008) and Regulations, Interested and Affected Parties (I&APs) need to be notified and consulted with, as part of a prospecting right application.

The public participation process aims to provide I&APs with objective information in order to assist them to:

- Raise issues of concern and make suggestions for enhanced benefits;
- Contribute local knowledge and experience;
- Verify that their issues have been captured;
- Verify that their issues have been considered; and
- Comment on the findings of the EMP.

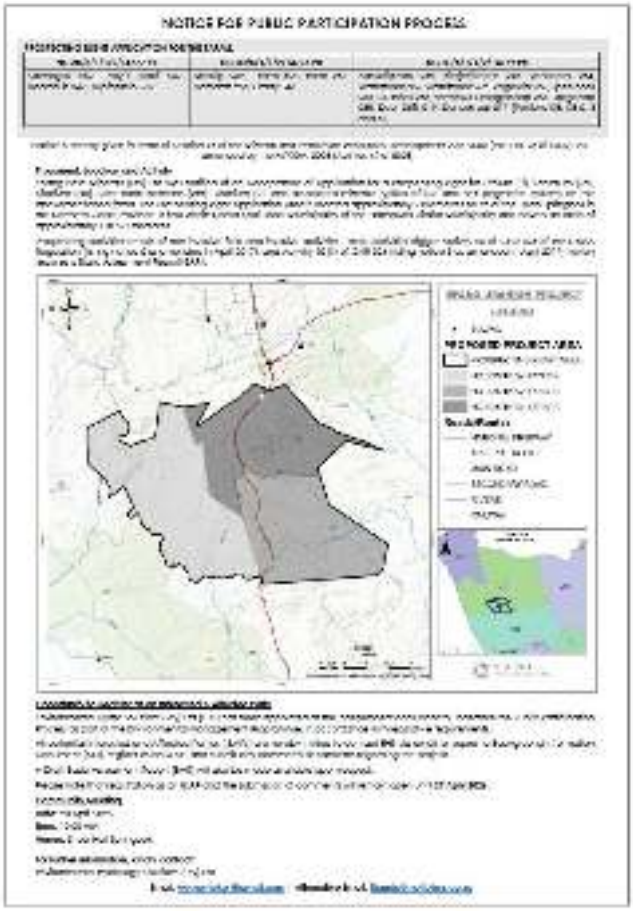
Site Notice Proof and Content

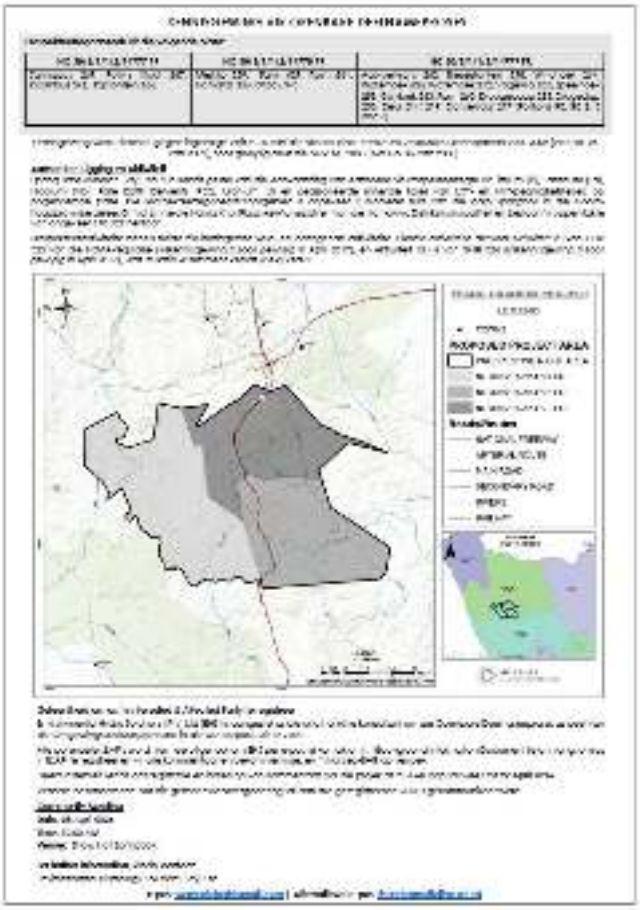
Namakwa District Municipality

Nama Khoi Local Municipality

Springbok Library

SAPS Springbok


NOTICE FOR PUBLIC PARTICIPATION PROCESS



Notice in Die Plattelander & (17 April 2026)


TENDER NOTICE AND INVITATION TO TENDER


KENNISGEWING VIR OPENBARE DEELNAMEPROSES

NAMA KHOI MUNISIPALITEIT

NAMA KHOI MUNISIPALITEIT

Email Sent to all Interested and Affected Parties.

Background Information Document Attached as **Appendix A.**

ii. Summary of issues raised by I&APs

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

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated**
AFFECTED PARTIES					
Landowner/s					
Lawful occupier/s of the land					
Landowners or lawful occupiers on adjacent properties					
Municipal councillor					
District Municipality –					
Local Municipality –					
Organs of state (Responsible for infrastructure that may be affected i.e. Roads Department, Eskom, Telkom, DWA etc.)					
Communities					
Department of Land Affairs					
Traditional Leaders					
No traditional leaders are present on site					
Department of Environmental Affairs					
Other Competent Authorities affected					
No other competent authorities will be affected as of yet.					
OTHER AFFECTED PARTIES					

A consultation report will be attached as **Appendix B** in the final Basic Assessment Report.

11. THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES.

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

i. Baseline Environment

This draft study is based on a combination of desktop study and a site visit. A finalised BAR with specialist studies will be compiled. As the project activities will only involve drilling, activities will not have a great effect on the environment, as rehabilitation will take place after each borehole is drilled.

a) Climate

The climate of Springbok is characterised by an arid to semi-arid regime with distinct seasonal patterns. Average monthly temperatures range from approximately 11.4°C in July to 22.6°C in February, with summer months (December–February) experiencing higher maximum temperatures of up to 29°C, while winter months (June–July) are cooler with minimum temperatures dropping to around 4–5°C. The area receives low annual precipitation of about 175 mm, with rainfall predominantly occurring during the winter months (May–August), peaking in June (±23 mm), and very dry conditions prevailing in summer (December–February). This reflects a typical Namaqualand winter rainfall climate with hot, dry summers and cool, slightly wetter winters.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Temp. (°C)	22.1	22.6	21.5	19.1	16.0	13.2	11.4	13.4	15.8	18.2	20.1	21.6
Min. Temp. (°C)	15	15	14	11	8	5	4	6	8	10	12	14
Max. Temp. (°C)	29	29	28	25	23	19	17	19	22	25	27	29
Precipitation (mm)	8	18	16	14	18	23	20	18	13	10	9	8

b) Topography and Elevation

The project site is located within the Namaqualand region of the Northern Cape, with Springbok serving as the main administrative and economic centre. The area is characterised by undulating to rugged terrain, consisting of low mountain ranges, rocky hills, and gently sloping plains. The landscape forms part of the Namaqualand escarpment, which gradually rises from the coastal lowlands towards the interior plateau.

Prominent topographical features in the region include the granite domes and inselbergs typical of Namaqualand, as well as mountain ranges such as the Kamiesberg Mountains located to the south of Springbok. These elevated areas contribute to the region's distinct topography, with elevations in Springbok itself averaging approximately 1,000 metres above sea level, increasing further towards the escarpment.

c) Geology and Soils:

Regional Geology

The project area is situated within the Namaqua-Natal Province, which comprises a complex assemblage of igneous and metamorphic rocks exposed along the western and southern margin of the Kaapvaal Craton. The geological evolution of the region is strongly influenced by the Namaqua Orogeny (ca. 1000–1200 Ma), which resulted in widespread metamorphism and deformation of pre-existing rocks.

The project area falls within the Bushmanland Tectonostratigraphic Terrane, a subdivision of the Namaqua-Natal Province, characterised by extensive granitic intrusions and high-grade metamorphic rocks. The Bushmanland Terrane comprises:

- A basement complex dated between approximately 1700 Ma and 2050 Ma,

- Supracrustal sequences of sedimentary and volcanic origin (1200–1900 Ma), and
- Intrusive suites emplaced between 950 Ma and 1200 Ma.

These intrusive rocks include the Little Namaqualand Suite, Spektakel Suite, T'Oubep Suite, and Koperberg Suite. Of particular importance is the Spektakel Suite (associated with the Okiep Terrane), which consists predominantly of sheet-like Concordia granites and leucogranites composed of quartz, plagioclase, biotite, and garnet. These granitoids are largely post-tectonic intrusions and are enriched in heat-producing elements such as Uranium and Thorium.

The Namaqua-Natal Province is unconformably overlain in places by the Neoproterozoic Nama Group sediments, which occur west of a major north–south trending fault system in the project area. These sediments include limestone and shale of the Zaris Formation (Kuibis Subgroup), occurring as discontinuous lenses.

Local Geology

The prospecting area in Springbok is primarily underlain by Concordia granite gneiss of the Spektakel Suite within the Namaqualand Metamorphic Complex, dated between approximately 1000 Ma and 1195 Ma. These rocks are associated with post-tectonic granitic intrusions and host uranium-bearing minerals such as zircon, monazite, and uraniferous thorianite, with additional occurrences in biotite, magnetite, and secondary minerals like chlorite and epidote. Leucogranite intrusions also contain elevated uranium concentrations. Structural features such as faults and deformation zones related to the Namaqua Orogeny influence the distribution of these lithologies and associated mineralisation.

Soils

Soils in the Springbok region are generally shallow, sandy to gravelly, and poorly developed, reflecting the underlying granitic bedrock and arid climate. They are typically low in organic content, weak in structure, and have limited moisture retention, making them highly susceptible to erosion and challenging for rehabilitation.

ii. Biological Environment

a) **Vegetation**

The majority of the prospecting site falls within the Namaqualand Klikoppe Shrubland (SKn 1) . Towards the north of the site, one can observe the Namaqualand Shale Shrubland (SKn 2) and the Namaqualand Blomveld (SKn 3).

Namaqualand Klipkoppe Shrubland (SKn 1)

This vegetation type falls within the Succulent Karoo Biome and the Namaqualand Hardeveld Bioregion. It has approximately 28% of its original extent remaining, with only about 5.8% formally protected. Despite a relatively high proportion of intact habitat (around 95%), it is classified as Least Threatened. However, its conservation status is of concern due to being poorly protected, indicating limited inclusion within formally conserved areas.

Namaqualand Shale Shrubland (SKn 2)

This vegetation type occurs within the same biome and bioregion and has approximately 24% of its original extent remaining. It has no formally protected areas, although about 99.6% of the vegetation is still intact. It is classified as Least Threatened, but its not protected status indicates a complete lack of formal conservation, which could pose a risk if land-use pressures increase in the future.

Namaqualand Blomveld (SKn 3)

Also located within the Succulent Karoo Biome and Namaqualand Hardeveld Bioregion, Namaqualand Blomveld retains about 28% of its original extent, with only 1.5% under formal protection. Around 94% of the vegetation remains in a natural or near-natural state, and it is similarly classified as Least Threatened. Nonetheless, it is considered hardly protected, highlighting a significant gap in conservation coverage despite its relatively intact condition.

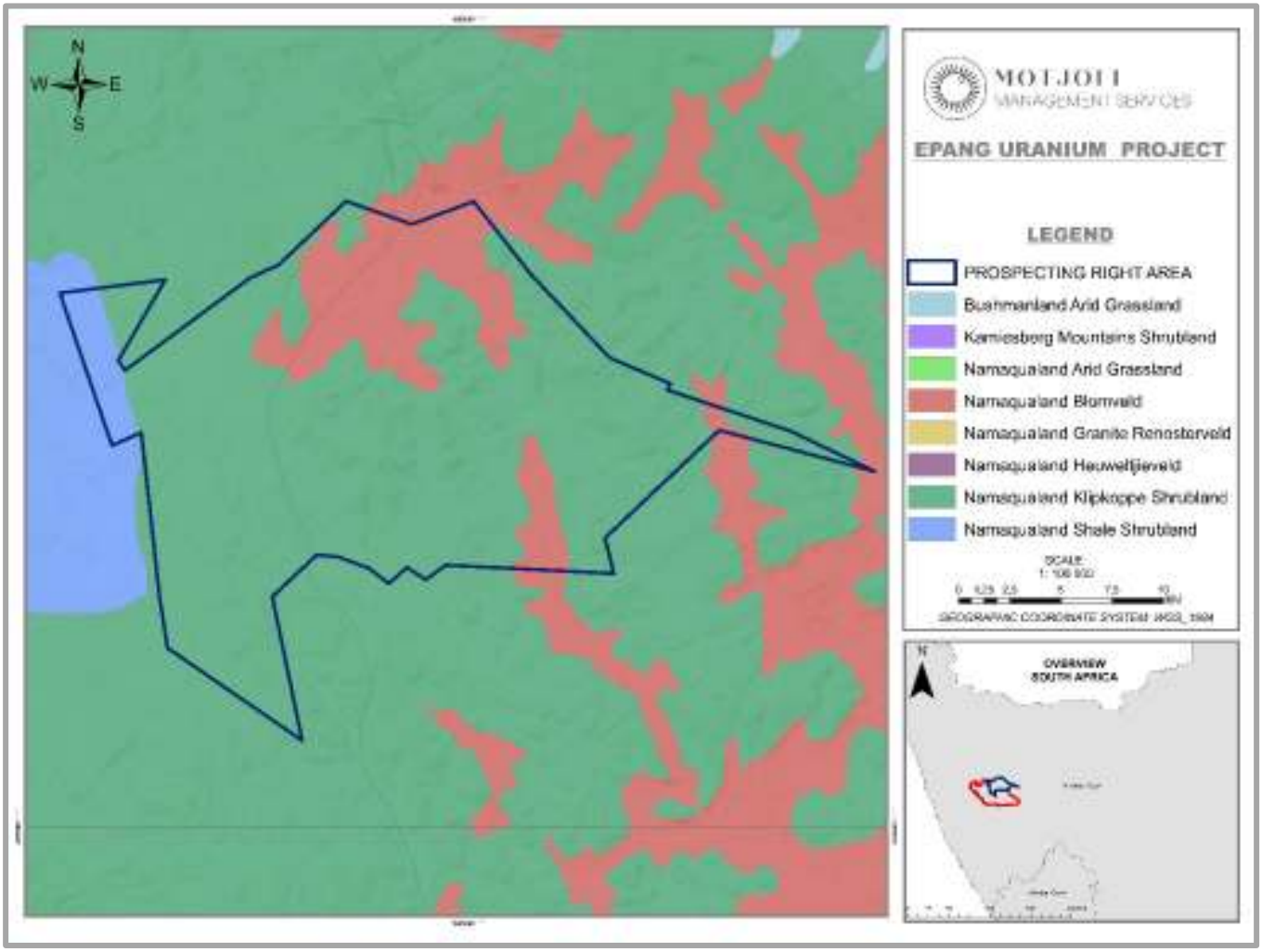


Figure A.3: Vegetation classification for the site and surrounding area

Protected and conservation areas are illustrated in Figure A.4. The proposed prospecting right area is located in close proximity to Goegap Nature Reserve.

Appropriate buffer zones will be taken into consideration during the development of the final layout plan to minimise potential impacts on these conservation areas.

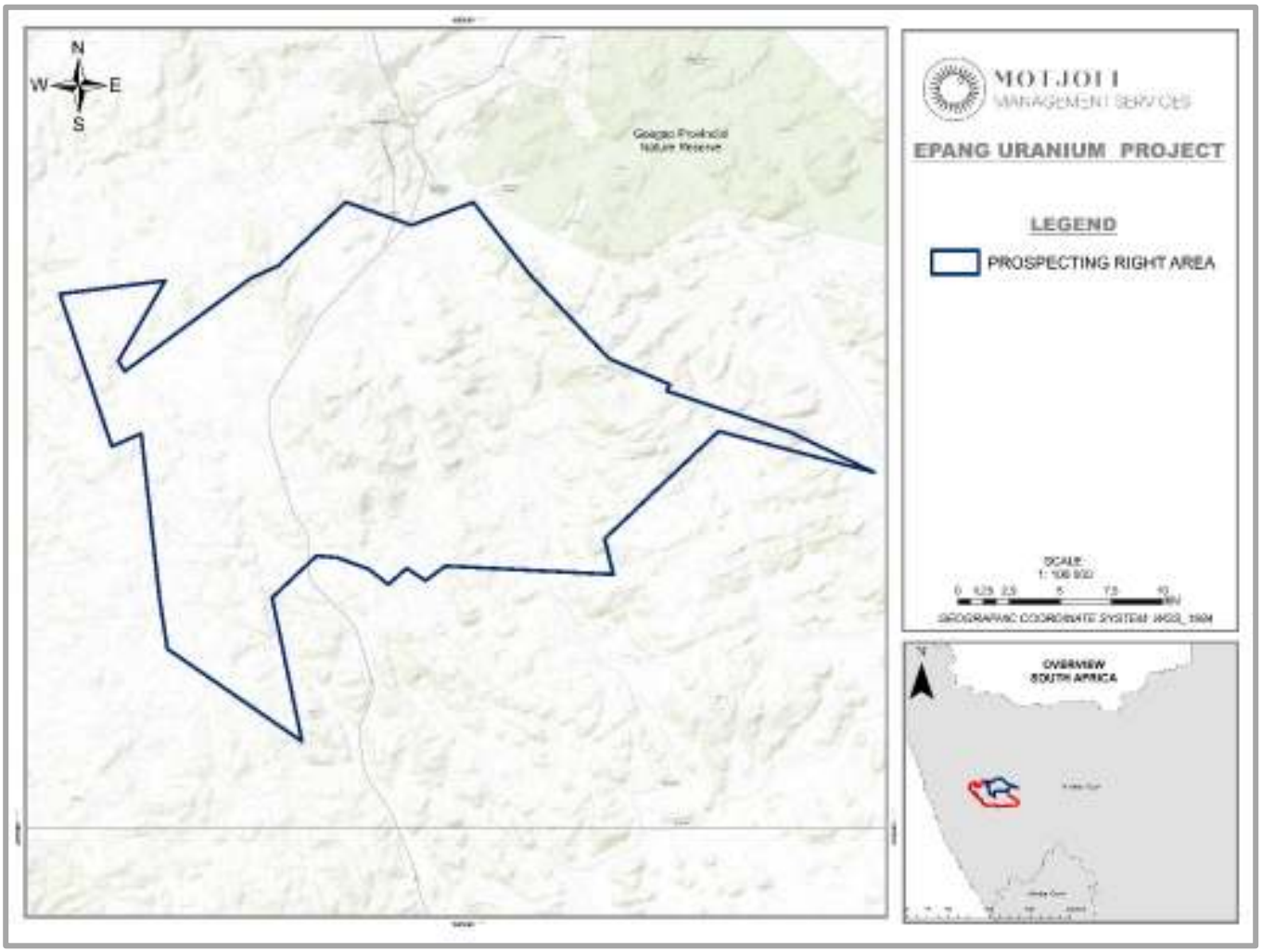


Figure A.4: Protected areas in the site and surrounding area

b) **Flora**

Namaqualand Klipkoppe Shrubland (SKn 1)

This rocky, shallow-soil environment supports hardy, drought-resistant succulents and dwarf shrubs adapted to exposed conditions. Likely species include:

- *Ruschia spp.* (vygies)
- *Drosanthemum spp.*
- *Crassula spp.*
- *Tylecodon paniculatus*
- *Euphorbia mauritanica*
- *Pachypodium namaquanum* (Halfmens)
- *Zygophyllum spp.*
- *Othonna cylindrica*

These species are typically found in crevices or between rocks, where limited moisture accumulates.

Namaqualand Shale Shrubland (SKn 2)

This type supports more continuous shrub cover on finer-textured shale soils, with high species richness and endemism. Likely species include:

- *Tripteris sinuata*

- *Ruschia robusta*
- *Drosanthemum spp.*
- *Brownanthus ciliatus*
- *Galenia africana*
- *Salsola spp.*
- *Lycium cinereum*
- *Pteronia spp.*

These species are adapted to slightly heavier soils and can form denser stands compared to the more open rocky shrublands.

Namaqualand Blomveld (SKn 3)

This vegetation type is famous for its seasonal wildflower displays, with a mix of annuals, geophytes, and low shrubs responding to rainfall. Common species include:

- *Dimorphotheca sinuata (Namaqualand daisy)*
- *Ursinia cakilefolia*
- *Gazania krebsiana*
- *Arctotis spp.*
- *Grielum humifusum*
- *Oxalis spp.*
- *Lachenalia spp.*
- *Babiana spp.*

These species dominate during flowering seasons, especially after good winter rains.

Terrestrial Biodiversity Assessment

Ecosystem status classification refers to the likelihood of an ecosystem, in this case defined as a vegetation type, persisting in the future given the current amount of that ecosystem that has already been transformed to other land uses. Ecosystems that are Critically Endangered (CR), Endangered (EN), or Vulnerable (VU) can be listed in terms of Section 52 of the Biodiversity Act as threatened ecosystems at both national and provincial level. Importantly, any land-use change application occurring within an ecosystem listed as Critically Endangered or Endangered will automatically require environmental authorization.

SANBI has developed a classification system that uses a suite of biodiversity loss indicators or criteria to assign national ecosystem status to South African vegetation types. For the provincial level classification for Northern Cape only criterion A was used to determine ecosystem status of vegetation types.

Criteria used to identify threatened terrestrial ecosystems, with thresholds for critically endangered (CR), endangered (EN) and vulnerable (VU) ecosystems (SANBI 2008).

Criterion	CR	EN	VU
A1: Irreversible loss of natural habitat	Remaining natural habitat≤ biodiversity target	Remaining natural habitat ≤ (biodiversity target + 15%)	Remaining natural habitat ≤ 60% of original area of ecosystem

A2: Ecosystem degradation and loss of integrity (only applicable to forests currently)	≥ 60% of ecosystem significantly degraded	≥ 40% of ecosystem significantly degraded	≥ 20% of ecosystem significantly degraded

As illustrated in Figure A.5, no threatened ecosystems occur in close proximity to the proposed prospecting area. Should specialist studies indicate otherwise, appropriate buffer zones will be incorporated into the final layout plan to minimise potential impacts on any identified threatened ecosystems.

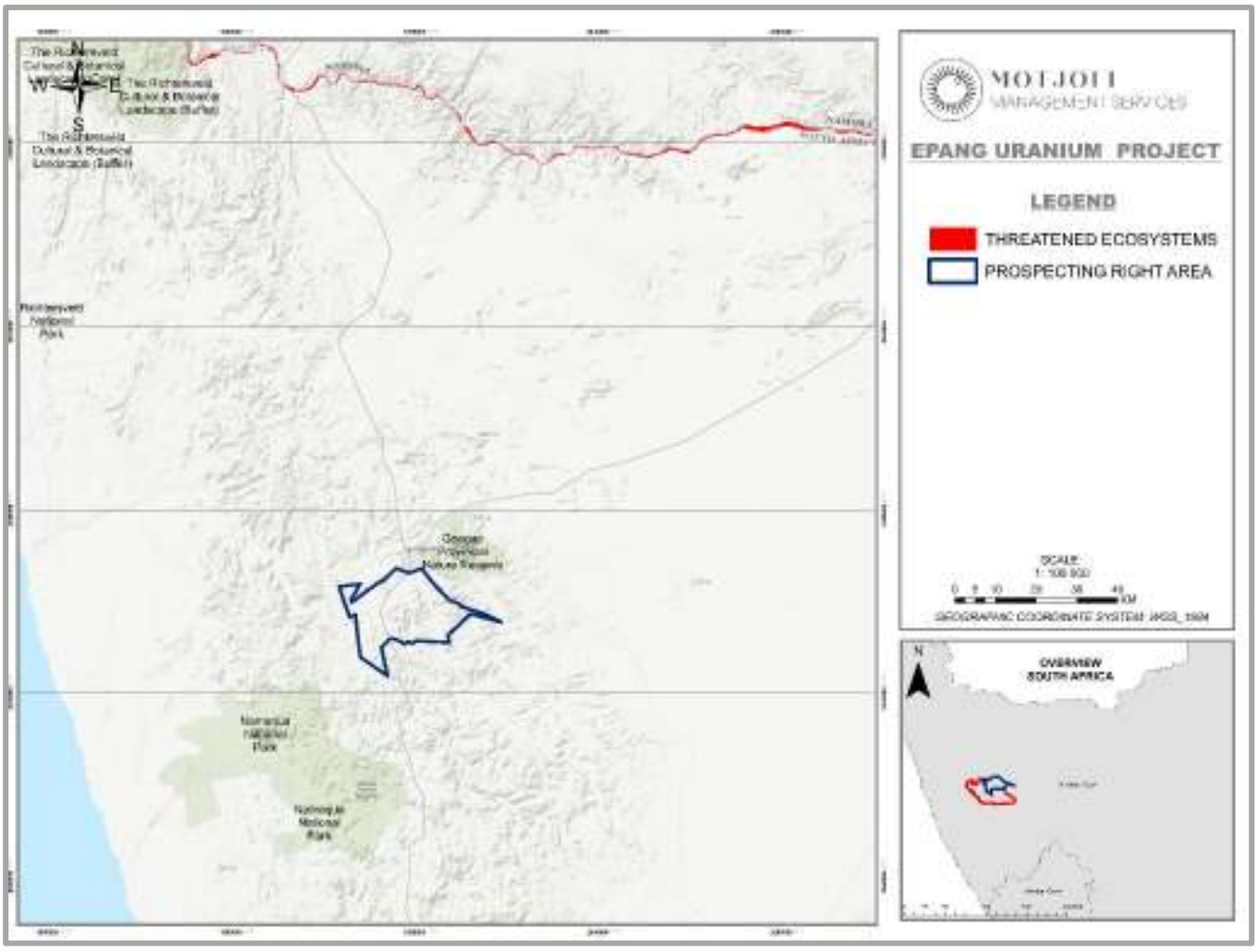


Figure A.5: Threatened Ecosystems around site.

c) **Fauna**

Amphibians

The amphibian species likely to occur within the prospecting right area are generally limited due to the arid conditions and low availability of permanent surface water. Species present are typically those adapted to ephemeral water bodies and opportunistic breeding following rainfall events. Common species that may occur include the Namaqua rain frog (*Breviceps namaquensis*), Karoo toad (*Vandijkophrynus gariepensis*), and the western leopard toad (*Sclerophrys pantherina*) in more suitable microhabitats.

Species of conservation concern are relatively few in this region; however, certain amphibians are protected under the National Environmental Management: Biodiversity Act due to their vulnerability to

habitat disturbance and collection. Given the arid environment, it is unlikely that large, water-dependent species such as the giant bullfrog (*Pyxicephalus adspersus*) will occur on site.

Although amphibian diversity is naturally low, their ecological importance remains significant, particularly in nutrient cycling and as indicators of environmental health. Any temporary pans, drainage lines, or seasonally inundated areas should be carefully managed, as these provide critical breeding habitats. Disturbance to such areas should be minimised, and where impacts are unavoidable, mitigation measures such as relocation of individuals during construction should be considered. The absence of highly sensitive or threatened amphibian species does not reduce the need for responsible environmental management, as even common species contribute to ecosystem functioning within the Succulent Karoo.

Reptiles

This region supports a diverse assemblage of reptile species, many of which are well adapted to harsh, dry conditions and extreme temperature fluctuations.

The Springbok area and its surroundings provide suitable habitat for several endemic and near-endemic reptile species, particularly those associated with rocky habitats and sandy substrates. Notable species in the region include the Namaqua dwarf adder (*Bitis schneideri*), one of the smallest vipers in the world, the western sandveld lizard (*Nucras tessellata*), and the Namaqua chameleon (*Chamaeleo namaquensis*). Rocky ridges and inselbergs in the area may also support girdled lizards (Family *Cordylidae*) and various gecko species adapted to crevice habitats (Branch, 1998).

Although the region hosts several endemic species, most are not currently listed as threatened due to the relatively large and continuous extent of suitable habitat across Namaqualand. However, some species, such as the Namaqua dwarf adder, are considered of conservation interest due to their restricted ranges and sensitivity to habitat disturbance. Overall, the reptile fauna of the Springbok region is considered moderately diverse, with conservation importance linked primarily to habitat integrity and the presence of localised endemics.

Avifauna/Birds

According to the Southern African Bird Atlas Project (SABAP1: Harrison et al., 1997), bird species richness within the Namaqualand region, covering the prospecting site, is relatively low compared to more mesic parts of South Africa.

Available SABAP2 data for this region generally reflects moderate to low species counts per pentad, often influenced by limited sampling effort and low observer coverage. As a result, recorded species richness may underestimate actual diversity. Typical bird species expected in the area include the Karoo lark (*Calendulauda albescens*), Namaqua sandgrouse (*Pterocles namaqua*), tractrac chat (*Emarginata tractrac*), and black-eared sparrow-lark (*Eremopterix australis*), all of which are well adapted to arid shrubland habitats. Raptors such as the pale chanting goshawk (*Melierax canorus*) may also occur, along with seasonal visitors following rainfall events.

Overall, atlas data indicates that bird species richness in this region is considered low to moderate on a national scale. However, this should be interpreted cautiously, as the relatively low recorded diversity is influenced by under-sampling rather than a true absence of species. Despite this, the area supports important assemblages of arid-adapted birds, and maintaining habitat integrity is essential for sustaining ecological processes and avifaunal diversity within the Succulent Karoo Biome.

Bird species that are likely to be seen on site

Common Name	Scientific Name	Conservation Status
Martial Eagle	*Polemaetus bellicosus*	Endangered
Secretarybird	*Sagittarius serpentarius*	Endangered
Ludwig's Bustard	*Neotis ludwigii*	Endangered
White-backed Vulture	*Gyps africanus*	Critically Endangered
White-headed Vulture	*Trigonoceps occipitalis*	Critically Endangered
Cape Vulture	*Gyps coprotheres*	Endangered
Lappet-faced Vulture	*Torgos tracheliotos*	Endangered
Bateleur	*Terathopius ecaudatus*	Endangered
Black Harrier	*Circus maurus*	Endangered
Tawny Eagle	*Aquila rapax*	Vulnerable
Blue Crane	*Grus paradisea*	Vulnerable
African Marsh Harrier	*Circus ranivorus*	Vulnerable
Lesser Flamingo	*Phoeniconaias minor*	Near Threatened
Kori Bustard	*Ardeotis kori*	Near Threatened
Verreaux's Eagle	*Aquila verreauxii*	Least Concern
Lanner Falcon	*Falco biarmicus*	Least Concern
Pale Chanting Goshawk	*Melierax canorus*	Least Concern
Pygmy Falcon	*Polihierax semitorquatus*	Least Concern
African Fish Eagle	*Haliaeetus vocifer*	Least Concern
Karoo Korhaan	*Eupodotis vigorsii*	Least Concern
Namaqua Sandgrouse	*Pterocles namaqua*	Least Concern
Karoo Lark	*Calendulauda albescens*	Least Concern
Tractrac Chat	*Emarginata tractrac*	Least Concern
Karoo Chat	*Emarginata schlegelii*	Least Concern
Familiar Chat	*Oenanthe familiaris*	Least Concern
Rufous-eared Warbler	*Malcorus pectoralis*	Least Concern
Spike-heeled Lark	*Chersomanes alocasia*	Least Concern
Black-eared Sparrow-Lark	*Eremopterix australis*	Least Concern
Sociable Weaver	*Philetairus socius*	Least Concern
Scaly-feathered Weaver	*Sporopipes squamifrons*	Least Concern

Mammals

The prospecting right area supports a moderate diversity of mammals typical of the Succulent Karoo biome. Its largely intact vegetation, rocky hills, and semi-arid shrublands provide habitats for both small antelope and carnivores, while connectivity to nearby protected areas such as Namaqua National Park and Skilpad Nature Reserve enables occasional movement of larger mammals.

Common Name	Scientific Name	Conservation Status
Caracal	*Caracal caracal*	Near-threatened
Aardvark	*Orycteropus afer*	Least Concern
Cape Fox	*Vulpes chama*	Least Concern
Bat-eared Fox	*Otocyon megalotis*	Least Concern
Honey Badger	*Mellivora capensis*	Least Concern
Common Duiker	*Sylvicapra grimmia*	Least Concern
Steenbok	*Raphicerus campestris*	Least Concern
Springhare	*Pedetes capensis*	Least Concern
Cape Hare	*Lepus capensis*	Least Concern
Meerkat	*Suricata suricatta*	Least Concern
Bats	Various species	Least Concern

d) **Conservation Areas**

Protected and conservation areas are illustrated in Figure A.4. The proposed prospecting right area is located in adjacent to Namaqua National Park, Skilpad Nature Reserve, and Goegap Nature Reserve.

Appropriate buffer zones will be taken into consideration during the development of the final layout plan to minimise potential impacts on these conservation areas.

e) **Hydrology**

Catchment

The site lies within the Lower Orange primary river catchment (F) and more specifically the F30C, F30Band F30D quaternary catchments. The mean annual precipitation (MAP), potential evapotranspiration (PE) and mean annual simulated runoff (MASR) values for the quaternary catchment are presented below. Information for the quaternary catchments

Quaternary catchment	MAP (m)	PE (mm)	MASR (m)
F30C	183,7	2481,6	7,5
F30D	161,6	2517,2	1,7
F30B	106,9	2594,9	0,1

Water Management Area

The site is located in the Vaal – Orange (Lower Orange) Water Management Area.

Rivers

There are multiple rivers that run through the site namely; Drodab, Melk, Koringhuis, Brand and Koringhuis, which are listed as class C in NFEPA.

Freshwater Ecosystem Priority Areas

Freshwater Ecosystem Priority Areas (FEPAs) are strategic spatial priorities for conserving freshwater ecosystems and supporting sustainable use of water resources (Driver et al. 2011). FEPAs were determined through a process of systematic biodiversity planning and were identified using a range of criteria for conserving ecosystems and associated biodiversity of rivers, wetlands and estuaries.

FEPAs are often tributaries and wetlands that support hard-working large rivers and are an essential part of an equitable and sustainable water resource strategy. FEPAs need to stay in good condition to manage and conserve freshwater ecosystems, and to protect water resources for human use. This does not mean that FEPAs need to be fenced off from human use, but rather that they should be supported

by good planning, decision-making and management to ensure that human use does not impact on the condition of the ecosystems.

The current and recommended condition for all river FEPAs is A or B ecological category. The FEPA status indicates that the rivers in these sub-quaternary catchments should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources. A river FEPA is located on site.

Wetlands

Wetlands are extremely important habitats but are extremely threatened and impacted upon. According to the data used for the FEPA maps there are natural wetlands within the site (Figure A.6), classified as a channelled valley-bottom wetland. Some of the wetlands in close vicinity to the site are associated with the rivers flowing near the site.

A channelled valley-bottom wetland is mostly a flat valley-bottom wetland dissected by and typically elevated above a channel. Dominant water inputs to these areas are typically from the channel.

The NFEPA located on site are categorized as AB.

Description of NFEPA wetland condition categories

PES Equivalent	NFEPA Condition	Description
Natural or Good	AB	Percentage natural land cover ≥75%
Moderately Modified	C	Percentage natural land cover 25-75%
Heavily to Critically Modified	DEF	Riverine wetland associated with a D, E, F or Z ecological category river
	Z1	Wetland overlaps with a 1:50,000 "artificial" inland water body from the Department of Land Affairs: Chief Directorate of Surveys and Mapping (2005-2007)
	Z2	Majority of the wetland unit is classified as "artificial" in the wetland delineation GIS layer
	Z3	Percentage natural land cover <25%

Groundwater

Water delineation study will be conducted and included in the final BAR.

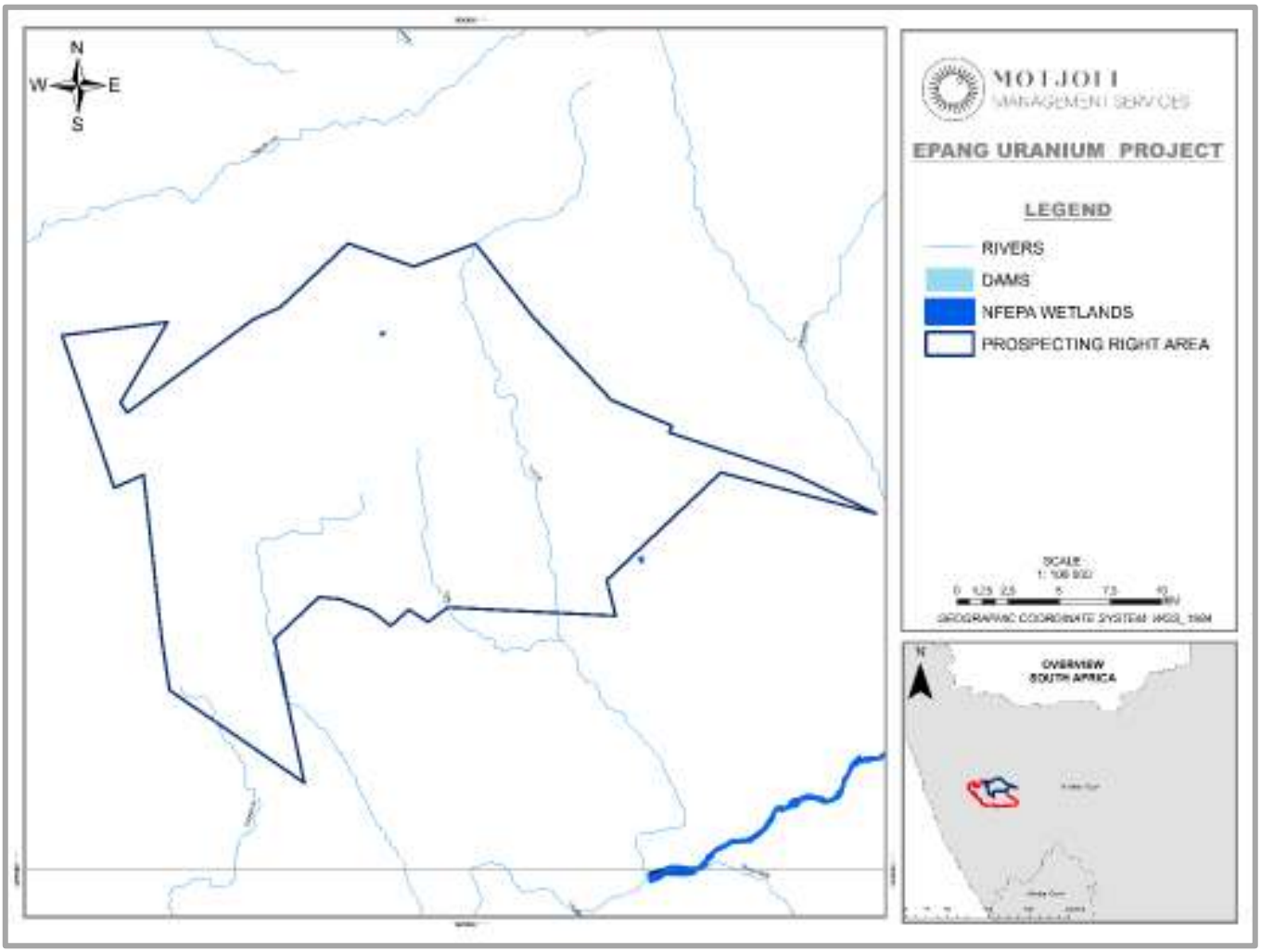


Figure A.6: Inland water features with Freshwater Ecosystem Priority Areas within and near the site

f) **Noise**

The ambient noise condition of the area of the site is expected to be quiet and representative of a rural noise district. There may however be noise from the agricultural activities near the site. The noise sensitive sites may be the residences near the site.

g) **Air Quality**

The ambient air quality in the area of the site is expected to be acceptable. There are a number of sources of air pollution close to the site including agricultural activities, vehicle entrained dust and fires. The residences within and near the site are considered sensitive air quality receptors.

h) **Waste**

During prospecting activities, domestic waste will be generated (paper, food waste, plastic, etc.). The only hazardous waste that will be used on site includes oil, diesel and greases.

i) **Archaeology and Cultural Interest**

A heritage resource can be described as any place or object of cultural significance, i.e. aesthetic, architectural, historic, scientific, social, spiritual, linguistic or technological value or significance.

The following terminology is used when referring to cultural, historic and archaeological heritage:

Stone Age: The Stone Age began with the appearance of early humans. The Stone Age people were hunter-gatherers. Stone tools and rock art are found throughout South Africa. The Stone Age can be divided into the Early Stone Age (2 000 000 – 150 000 Before Present); the Middle Stone Age (150 000 – 30 000 Before Present) and the Late Stone Age (30 000 until ca. AD 200).

Iron Age: This period covers the last 2000 years. Farming communities moved down from the eastern parts of Africa into the southern parts of Africa. These people settled permanently, practised agriculture and had domesticated animals. They introduced metal and mining to southern Africa.

Historical Period: This period falls into the last 300 years with the arrival of white settlers on the continent. These settlers moved into the interior of southern Africa to, among others, settle, farm and mine.

The archaeological and cultural interest will not be impacted as the prospecting activities only entails drilling. A study will take place, where appropriate buffer zones will be taken into consideration during the development of the final layout plan to minimise potential impacts on the important heritage areas.

j) **Socio-Economic Setting**

Population

Specific reference is made to the Census 2022 statistics for the Namakhoi Local Municipality, which recorded a population of approximately 56 300 people. This reflects a slight decline compared to the 2011 census population of approximately 58 700, indicating a marginal decrease in population over the intercensal period.

Race

The population of the Namakhoi Local Municipality is predominantly Coloured, constituting approximately 82% of the total population. This is followed by the Black African population at around 14%, while the White population accounts for approximately 3%, and the Indian/Asian population makes up less than 1% of the total population.

Description of the current land uses

The area under prospecting application is largely characterised by natural, undisturbed vegetation, typical of the surrounding semi-arid landscape. Adjacent land uses include extensive grazing (livestock farming), which is the dominant agricultural activity in the region, as well as limited areas of cultivated land. Urban and built-up areas are mainly concentrated around settlements such as Springbok, which serves as the primary economic and administrative centre of the municipality.

Refer to figure A.7.

k) **Description of specific environmental features and infrastructure on the site.**

Refer to the whole of section 11.

l) **Environmental and current land use map.**

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

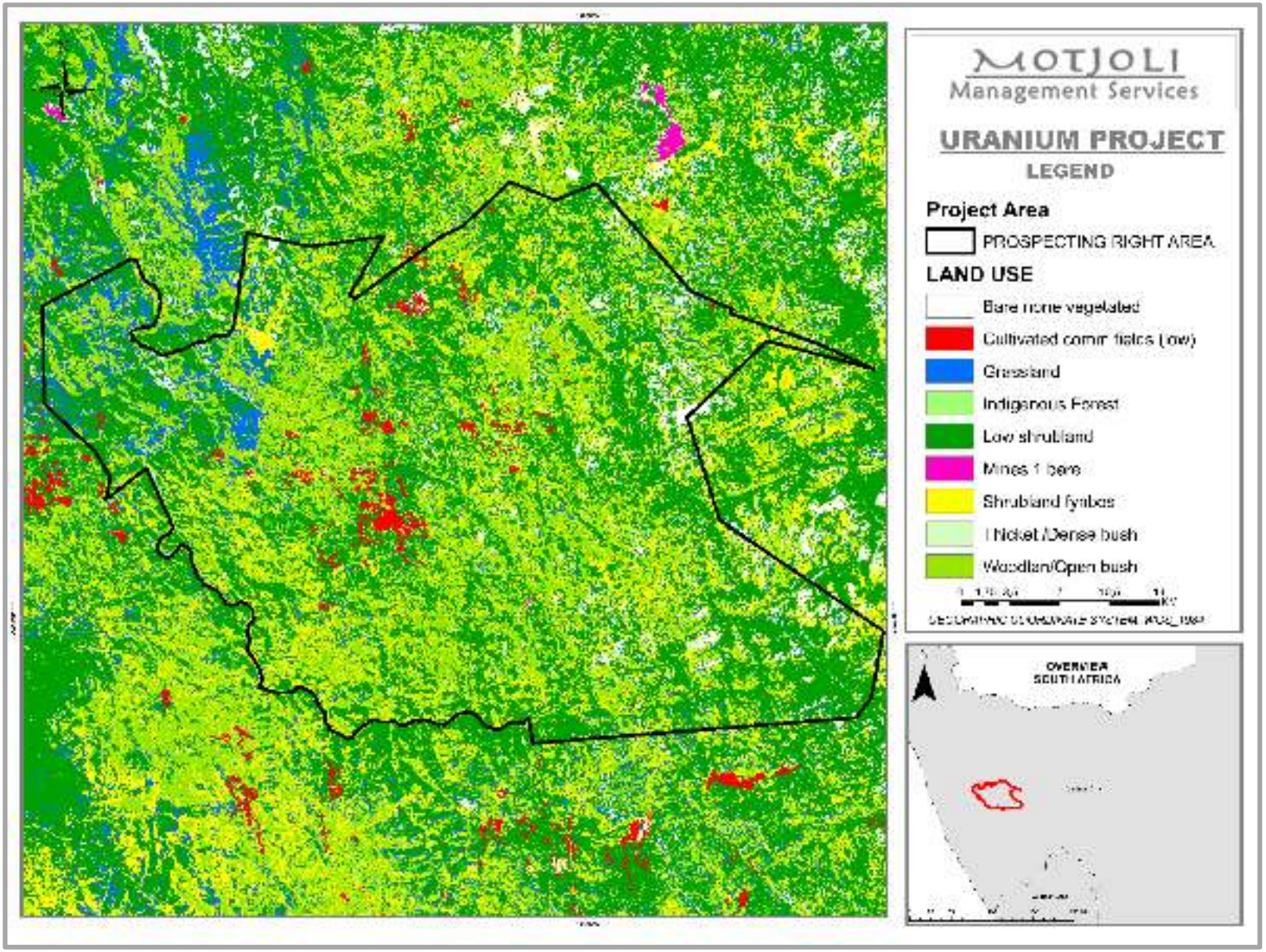


Figure A.7: Land Use Map

12. IMPACTS AND RISKS IDENTIFIED INCLUDING THE NATURE, SIGNIFICANCE, CONSEQUENCE, EXTENT, DURATION AND PROBABILITY OF IMPACTS, INCLUDING THE DEGREE TO WHICH THESE IMPACTS

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impact of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of these impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources and can be avoided, managed or mitigated).

i. Potential impacts per activity and listed activities

The non-invasive activities described above will have no impact. The impacts have rather been described for the invasive activities – i.e. Drilling. The impacts are described per aspect that might be impacted upon by these invasive activities on site.

Potential impacts per aspect that might be impacted upon

ASPECT	POTENTIAL IMPACT
Soil	o Compaction – from movement of heavy machinery (drill rig) o Contamination – from diesel, oil, grease, etc. used for the prospecting. o Erosion – from the clearing of prospecting sites and movement along access tracks
Land use	Drilling may interfere with any land uses currently taking place on the site
Biodiversity (fauna and flora)	o The fauna and flora could be negatively affected by the establishment of drilling site and access tracks o Alien and invasive species could be introduced through the disturbance
Surface- and groundwater	Contamination – from diesel, oil, grease, etc. used for the drilling.
Heritage sites	Heritage sites may be present on the site, no impact as prospecting activities only entail drilling.
Dust	Dust from drilling activities may coat vegetation making it unsuitable for livestock grazing
Noise	Noise from the drill rig could disturb residents within immediate site

ii. Potential cumulative impacts

No potential cumulative impacts were identified.

iii. Potential impact on heritage resources

Heritage sites may be present on the site, drilling activities has minimal impact as there is no bulk sampling.

iv. Potential impacts on communities, individuals or competing land uses in close proximity

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case.)

Expectations may arise that numerous employment and business opportunities will become available if a mining right is granted; however, such opportunities are typically associated with the mining phase rather than the prospecting phase. All Interested and Affected Parties (I&APs) will be duly informed should a mining application process be initiated.

v. Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties

All comments received and/or collected during the public participation process will be used in compilation of the final BAR.

vi. Confirmation of specialist report appended

(Refer to guide)

Specialist studies to be included in the final BAR.

vii. Methodology used in determining and ranking 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 they initial site layout needs revision).

Criteria of assigning significance to potential impacts

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

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

The impacts were individually described and assessed using the criteria drawn from the Environmental Impact Assessment (EIA) Regulations, published by the DEA in terms of the NEMA (Act 107 of 1998).

The significance of each impact is assessed using the following formula (before and after mitigation):

Significance Point (SP) = (Probability + Extent + Duration) x Intensity

The maximum value is 150 SP. The impact significance will then be rated as follows:

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

Probability (P)		
None (N)	1	The possibility of the impact occurring in none, due either to the circumstances, design or experience (0%).
Possible (P)	2	The possibility of the impact occurring is very low, due either to the circumstances, design or experience (25%).
Likely (L)	3	There is a possibility that the impact will occur to the extent that provisions must therefore be made (50%).
Highly likely (H)	4	It is most likely that the impacts will occur at some stage of the development and plans must be drawn up before carrying out the activity (75%).
Definite (D)	5	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 (100%).
Extent (E)		
Footprint (F)	1	The impact area extends only as far as the activity which occurs within the total site area.
Site (S)	2	The impact could affect the whole site or a significant portion of the site.
Regional (R)	3	The impact could affect the area including the neighbouring farms, the transport route and/or the adjoining towns.
National (N)	4	The impact could have an effect that expands throughout the country.
International (I)	5	Where the impact has international ramifications that extend beyond the boundaries of the country.
Duration (D)		
The period over which the impact will be experienced		
Temporary (T)	1	0 – 1 years (or confined to Phase 1).
Short (S)	2	1-2 years (or confined to phase 1 and Phase 2).
Medium (M)	3	2-3 years (or confined to phase 1 to Phase 3).
Long (L)	4	For the whole life of project (including closure and rehabilitation period).
Permanent (P)	5	Beyond the anticipated lifetime of the project.
Intensity (I)		
Insignificant (I)	2	Will have a no or very little impact on the health and welfare of humans and environment
Low (L)	4	Will have a slight impact on the health and welfare of humans and environment
Moderate (M)	6	Will have a moderate impact on the health and welfare of humans and environment
High (H)	8	Will have a significant impact on the health and welfare of humans and the environment
Very high (V)	10	Will have a severe impact on the health and welfare of humans and the environment

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

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

Positive:

- The economy and society will be benefiting from future proposed prospecting activities that could lead to the development of a Mine and possible work opportunities.
- Research indicates that the rare minerals industry will experience an export demand within the next 10 years. The proposed prospecting activities which could lead to an eventual mining right application could ensure that the Northern Cape Province and South Africa will benefit from the projected growth of the rare minerals industry.

Negatives:

- Small disturbance to natural vegetation and soil profile.
- Slight increase in dust and noise in the close vicinity of each prospecting activity.

ix. 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).

ASPECT	POTENTIAL IMPACT	MITIGATION MEASURES
Soil	Compaction – from movement of heavy machinery.	o Existing roads and tracks will be used as far as possible. o New access tracks will be kept to a minimum. o Rehabilitation of disturbed areas will take place.
	Loss of topsoil – when digging the drilling sump there is clearing of vegetation, topsoil may be lost.	o Any removed topsoil will be kept to one side and protected from being blown away or being eroded. o Rehabilitation of disturbed areas will take place.
	Erosion – from the clearing of vegetation along access tracks.	Rehabilitation of disturbed areas will take place.
	Contamination – from diesel, oil, grease, etc. used for the drilling machinery and from maintenance of machinery conducted on site.	o Topsoil must not be contaminated with oil, grease, diesel, etc. which may inhibit the later growth of vegetation. o All chemicals, fuels and oils to be stored on site will be appropriately stored in sealed containers and placed on a lined area. o Inspect equipment daily for leaks. Machinery and equipment will only be maintained over a drip tray, a PVC lining to prevent soil and water contamination. No vehicle will be extensively repaired on site. o All equipment and vehicles must be adequately maintained so that during operations it does not spill oil, diesel, fuel, etc. o Any contaminated soil will be collected into non-permeable bags and disposed of at an approved landfill site. o A chemical toilet will be used on site and will be used in such a way as to prevent water pollution. Full or leaking toilets must be reported to the supervisor for corrective action or replacement.
Land use	Prospecting activities may interfere with any land uses currently taking place on the site.	o Only one drilling site will be operational at any time. o The area to be disturbed will be kept to a minimum (not exceeding 10m x 10m). o No prospecting site will be established within 50m of any agricultural land unless consent is received from the land owner. o Rehabilitation of disturbed areas will take place.

ASPECT	POTENTIAL IMPACT	MITIGATION MEASURES
Biodiversity (fauna and flora)	The fauna and flora could be negatively affected by the establishment of drilling sites and access tracks	o Drilling sites and access tracks will be located in areas that will result in minimal ground disturbance. o A field survey will be undertaken before locating borehole at each drilling site to confirm that no threatened species or ecologically sensitive areas are present in sections to be cleared. o Permission will be obtained from the landowner before trees are felled, should it be necessary. o All trees protected in terms of the National Forests Act, 1998, will be protected – will not be cut, disturbed, damaged, removed, etc. o Rehabilitation of drilling sites and disturbed areas will take place.
	Alien and invasive species could be introduced through the disturbance	Machinery will be cleared of mud and seeds prior to relocation to the next site to prevent the spread of alien invasive species.
Surface- and groundwater	o Contamination – from diesel, oil, grease, etc. used for the prospecting machinery and from maintenance of machinery conducted on site o Contamination – from domestic waste, sewerage and drilling activities. o Water discharge during drilling.	o No drilling will be established within 100m of any watercourse or wetland. o All chemicals, fuels and oils to be stored on site will be appropriately stored in sealed containers and placed on a lined area. o All waste will be collected, separated and stored properly in containers with lids and removed to an approved landfill. o Inspect equipment daily for leaks. Machinery and equipment will only be maintained over a drip tray, a PVC lining to prevent soil and water contamination. No vehicle will be extensively repaired on site. o All equipment and vehicles must be adequately maintained so that during operations it does not spill oil, diesel, fuel, etc. o Any contaminated soil will be collected into non-permeable bags and disposed of at an approved landfill site. o A chemical toilet will be used on site and will be used in such a way as to prevent water pollution. Full or leaking toilets must be reported to the supervisor for corrective action or replacement. o Rehabilitation of disturbed areas will take place.
	Drinking water	Drinking water will be supplied in plastic containers to be stored on site.
Heritage sites	Heritage sites may be present on the site, which may be disturbed and/or damaged during prospecting.	o Potential heritage sites will be identified during the planning of borehole locations and demarcated. o Access to these sites will then be limited and all workers will be notified to keep at least 100m away from these sites.