



PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORISATION APPLICATION FOR NEW KROONSTAD NORTH

**FINAL REHABILITATION, DECOMMISSIONING AND CLOSURE PLAN, INCORPORATING AN
ANNUAL REHABILITATION PLAN AND ENVIRONMENTAL RISK ASSESSMENT**

**SUBMITTED IN SUPPORT OF AN APPLICATION FOR AN ENVIRONMENTAL AUTHORISATION FOR
PROSPECTING LODGED IN TERMS OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS,
2014 (HEREIN REFERRED TO AS THE “EIA REGULATIONS”) IN RESPECT OF VARIOUS PROPERTIES
SITUATED IN THE MAGISTERIAL DISTRICTS OF KROONSTAD AND KOPPIES IN THE FREE STATE**

**AS PER THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AND
THE FINANCIAL PROVISIONING REGULATIONS, 2015**

**Prepared on Behalf of:
White Rivers Exploration (Pty) Ltd**

**DMRE REFERENCE NUMBERS:
Prospecting Right Ref #: FS 30/5/1/1/2/10696 PR
Environmental Authorisation Ref #: FS 30/5/1/1/3/2/10696 EM**

5 AUGUST 2024

DOCUMENT CONTROL			
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DOCUMENT CONTROL		
Rev	Date	Report
0	18 June 2024	Final Rehabilitation, Decommissioning and Closure Plan, Incorporating an Annual Rehabilitation Plan and Environmental Risk Assessment
1	5 August 2024	Final Rehabilitation, Decommissioning and Closure Plan, Incorporating an Annual Rehabilitation Plan and Environmental Risk Assessment

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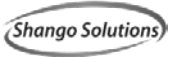
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Definitions

Abbreviation	Definition
EA	Environmental Authorisation. This constitutes the approval or dismissal of a project as issued by the relevant Competent Authority.
Applicant	The person or party applying for Environmental Authorisation for a listed activity and who is responsible for ensuring the development complies with all relevant legislation whether or not they are the land owner.
BAR and EMPR	Basic Assessment Report and Environmental Management Programme. DMR document for joint BAR and EMP related for mineral applications.
CA	Competent Authority.
DEA	The National Department of Environmental Affairs.
DMR	The Department of Mineral Resources. CA in South Africa for mineral right applications.
DWS	The Department of Water and Sanitation – both national offices and their various regional offices, which are divided across the country on the basis of water catchment areas.
EAR	Environmental Audit Report.
EAP	Environmental Assessment Practitioner.
ECO	Environmental Control Officer.
EIA Regulations	Environmental Impact Assessment Regulations.
EIR and EMP	Environmental Impact Report and Environmental Management Programme. DMR document for joint EIR and EMP related to mineral applications.
Environment	The Environment is defined in terms of the National Environmental Management Act (Act 107 of 1998) as the surroundings within which humans exist and that are made up of: The land, water and atmosphere of the earth: Micro-organisms, plant and animal life, any part or combination of the first three items and the inter-relationships between them the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.
FP	Financial Provision.
FP Regulations	Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations No. 1147 (effective 20 November 2015).
FRDCP	Final Rehabilitation, Decommissioning and Closure Plan.
Fauna	All living biological creatures, usually capable of motion, including insects and predominantly of protein-based consistency.
Fence	A physical barrier in the form of posts and barbed wire or any other concrete construction, (“palisade”-type fencing included), constructed with the purpose of keeping humans and animals within or out of defined boundaries.
Flora	All living plants, grasses, shrubs, trees, etc., usually incapable of easy natural motion and usually capable of photosynthesis.
GN	Government Notice.
HSE	Health, Safety and Environment.
I&AP	Interested and Affected Parties.
MPDRA	Minerals and Petroleum Development Act, No 28 of 2002.
PPP	Public Participation Process in terms of the NEMA and MPRDA.
MPDRA	Minerals and Petroleum Development Act, No 28 of 2002.
MP	Mining Permit in terms of the MPRDA.
MR	Mining Right in terms of the MPRDA.
PR	Prospecting Right in terms of the MPRDA.
SAHRA	South African Heritage and Resources Act, No25 of 1999.
SAMRAD	The web-based portal for mineral right applications and management – managed by the DMRE.



Final Rehabilitation, Decommissioning and Closure Plan, Incorporating an Annual Rehabilitation Plan and
Environmental Risk Assessment: FS 30/5/1/1/3/2/10696 EM

1 INTRODUCTION

White Rivers Exploration (Pty) Ltd (White Rivers Exploration) submitted an online Prospecting Right and Environmental Authorisation Application to the Free State Department of Mineral Resources and Energy on the 7th March 2024. The online application was successful and the project was allocated the reference number FS 30/5/1/1/2/10696 PR. Acceptance of the Prospecting Right application was received on the 25th March 2024. If the application is granted, White Rivers Exploration will be enabled to ascertain if economically viable mineral deposits exist within the application area. The minerals of interest include:

- | | | |
|-----------------------|---------------------------|-----------------|
| 1. Gold | 7. Iron | 13. Rare Earths |
| 2. Silver | 8. Manganese | 14. Sulphur |
| 3. Coal | 9. Molybdenum | 15. Uranium |
| 4. Cobalt | 10. Nickel | 16. Tungsten |
| 5. Copper | 11. Lead | 17. Zinc |
| 6. Diamond (Alluvial) | 12. Platinum Group Metals | |

The proposed project will be known as New Kroonstad North and it will aim to explore and quantify the potential mineral deposits. In order to undertake prospecting activities, White Rivers Exploration requires a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA, Act No.28 of 2002, as amended). White Rivers Exploration is also required to obtain an Environmental Authorisation (EA) in terms of the National Environmental Management Act, 1998 (NEMA, Act No. 107 of 1998, as amended) which involves the submission of a Basic Assessment Report (BAR), and Environmental Management Programme Report (EMPR) as well as undertaking a Public Participation Process (PPP). Shango Solutions (Pty) Ltd (Shango Solutions) has been appointed by White Rivers Exploration as the Environmental Assessment Practitioner (EAP) to assist in complying with these requirements.

In accordance with Section 24P of the NEMA the Applicant must, before the Minister responsible for mineral resources issues the EA, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts. This Final Rehabilitation, Decommissioning and Closure Plan (FRDCP) aims to meet this requirement and has been prepared in accordance with the requirements of the NEMA Financial Provisioning Regulations (2015) (NEMA GNR 1147).

According to the regulations, financial provision must be made for rehabilitation and remediation; decommissioning and closure activities at the end of prospecting, exploration, mining or production operations; and remediation and management of latent or residual environmental impacts which may become known in the future. In order to address these requirements, this document includes an annual rehabilitation plan, a final rehabilitation, decommissioning and mine closure plan, and an environmental risk assessment report.

2 DETAILS OF THE EAP

The contact details of the professionals who contributed to the preparation of the annual rehabilitation plan (ARP), final rehabilitation, decommissioning and mine closure plan (FRDCP) and the environmental risk assessment (ERA) are provided in Table 1.

Table 1: Details of EAP.

Name	Role	Qualifications/ Experience
Nangamso Zizo Siwendu	Environmental Scientist / EAP	B.Sc. Hons Environmental Management ~14 years environmental consulting experience

EXPERTISE OF THE EAP

2.1.1 Qualifications of the EAP

In terms of Regulation 13 of the 2014 EIA Regulations (Government Notice R. 326 of 2017), an independent Environmental Assessment Practitioner (EAP), must be appointed by the Applicant to manage the application. Shango Solutions has been appointed by the Applicant as the EAP and is compliant with the definition of an EAP as defined in Regulations 1 and 13 of the EIA Regulations and Section 1 of the NEMA. This includes, inter alia, the requirement that Shango Solutions is:

- 1) Objective and independent
- 2) Has expertise in conducting EIA's
- 3) Comply with the NEMA, the Regulations and all other applicable legislation
- 4) Takes into account all relevant factors relating to the application
- 5) Provides full disclosure to the Applicant and the relevant environmental authority

Zizo holds a B.Sc. Honours Degree in Environmental Management. Her experience lies mainly with environmental assessments for the mining and energy industry, including the compilation of environmental studies in support of Environment Authorisations for Prospecting, Mining, Exploration and Production Rights projects as well as other development projects that require Environmental Authorisation. She has compiled several environmental studies in support of mineral right applications such as for Sungu Sungu Gas (Pty) Ltd, Motuoane Energy (Pty) Ltd, African Exploration, Mining and Finance Corporation, Atoll Metal Recovery, Mafuri Mining and Construction (Pty) Ltd and Tetra 4 (previously known as Molopo South African Exploration).

The declaration of independence of the EAPs and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the consultant involved in the BAR process and the compilation of this report are attached as Appendix B in the Basic Assessment Report.

2.1.2 Summary of EAP's Past Experience

Shango Solutions, registered as Dunrose Trading 186 (Pty) Ltd and established in April 2004, provides a diverse range of services to the mineral and mining sectors. Currently, 27 permanent multi-disciplinary employees and about 24 nationally and internationally recognised affiliates are employed. The company has a track record of successful project management and leadership, including complex multi-disciplinary assignments.

Consultancy activities straddle the entire mining value chain from exploration to beneficiation, thereby providing the client with complete solutions. Activities are performed in multi-disciplinary teams. Areas of specialisation include target generation, exploration, geodatabase compilation and management, geological modelling, resource estimation, mineral asset valuations, due diligences, desktop project reviews and technical reporting. The company services the majority of the major mining houses, but also junior exploration companies, mineral resource investment firms, government institutions and departments and the artisanal and small-scale mining sectors. Shango Solutions collaborates closely with local and international experts in the mining and corporate

industries. This, in conjunction with our affiliations with academic and parastatal institutions, ensures provision of the most innovative and appropriate solutions to clients.

Shango has completed in excess of 400 projects, of which the majority were located in Africa. The company consequently has extensive ground-based mining related experience throughout Africa, especially southern, eastern and north-west African states. Our extensive knowledge of the African minerals industry has attracted some of the largest names in mineral extraction to our client base. The project portfolio highlights our cross-sectorial approach and capability.

Shango incorporates in excess of 500 years of Africa-based mining and exploration experience. This includes, but is not limited to, gold, platinum, rare earth elements, base metals, uranium, coal, natural gas, ferrochrome, aggregate, heavy mineral sands and diamonds. Over the last decades, we have established comprehensive 2D Geographic Information Systems (GIS) databases throughout Africa, which consider geological and geophysical data, mineral occurrences, defunct and existing mines, infrastructure and mining statistics.

3 LEGISLATIVE FRAMEWORK

The requirement for final rehabilitation, decommissioning and closure stems primarily from the legislative requirements of the MPRDA and NEMA. The relevant extracts from each of these are presented in this section.

3.1 MINERALS AND PETROLEUM RESOURCES DEVELOPMENT ACT, ACT 28 OF 2002

The following extracts relate to the principle of closure for any right issued under the MPRDA:

- Section 43(1): The holder of a prospecting right, mining right, retention permit, mining permit, or previous holder of an old order right or previous owner of works that has ceased to exist, remains responsible for any environmental liability, pollution, ecological degradation, the pumping and treatment of extraneous water, compliance to the conditions of the environmental authorisation and the management and sustainable closure thereof, until the Minister has issued a closure certificate in terms of this Act to the holder or owner concerned
- Section 43(4): An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the required information, programmes, plans and reports prescribed in terms of this Act and the NEMA
- Section 43 (5): No closure certificate may be issued unless the Chief Inspector and each government department charged with the administration of any law which relates to any matter affecting the environment have confirmed in writing that the provisions pertaining to health and safety and management of pollution to water resources, the pumping and treatment of extraneous water and compliance to the conditions of the environmental authorisation have been addressed
- Section 43 (7): The holder of a prospecting right, mining right, retention permit, mining permit, or previous holder of an old order right or previous owner of works that has ceased to exist, or the person contemplated in subsection (2), as the case may be, must plan for, manage and implement such procedures and such requirements on mine closure as may be prescribed

- Section 43 (8): Procedures and requirements on prospecting or mine closure as it relates to the compliance of the conditions of an environmental authorisation, are prescribed in terms of the NEMA

3.2 MINERAL AND PETROLEUM RESOURCES DEVELOPMENT REGULATIONS

The following extracts from the MPRDA Regulations are specifically applicable to the preparation of this FRDCP:

- Regulation 51 (a)(i): An EMPR contemplated in section 39(1) of the Act must include the following: A description of the environmental objectives and specific goals for mine closure
- Regulation 54: Quantum of financial provision:
 - (1) The quantum of the financial provision as determined in a guideline document published by the Department from time to time, include a detailed itemization of all actual costs required for:
 - a. premature closure regarding: (i) the rehabilitation of the surface of the area; (ii) the prevention and management of pollution of the atmosphere; and (iii) the prevention and management of pollution of water and the soil; and (iv) the prevention of leakage of water and minerals between subsurface formations and the surface
 - b. decommissioning and final closure of the operation
 - c. post closure management of residual and latent environmental impacts
 - (2) The holder of a prospecting right, mining right or mining permit must annually update and review the quantum of the financial provision:
 - a. in consultation with a competent person
 - b. as required in terms of the approved EMPR or EMP
 - c. as requested by the Minister
- Regulation 56: Principles for mine closure: In accordance with applicable legislative requirements for mine closure, the holder of a prospecting right, mining right, retention permit or mining permit must ensure that:
 - (a) the closure of a prospecting or mining operation incorporates a process which must start at the commencement of the operation and continue throughout the life of the operation
 - (b) risks pertaining to environmental impacts must be quantified and managed pro-actively, which includes the gathering of relevant information throughout the life of a prospecting or mining operation
 - (c) the safety and health requirements in terms of the Mine Health and Safety Act (Act 29 of 1996) are complied with
 - (d) residual and possible latent environmental impacts are identified and quantified
 - (e) the land is rehabilitated, as far as is practicable, to its natural state, or to a predetermined and agreed standard or land use which conforms with the concept of sustainable development
 - (f) prospecting or mining operations are closed efficiently and cost effectively

- Regulation 61: Closure objectives- Closure objectives form part of the draft EMPR or EMP, as the case may be, and must:
 - (a) identify the key objectives for mine closure to guide the project design, development and management of environmental impacts
 - (b) provide broad future land use objective(s) for the site
 - (c) provide proposed closure costs
- Regulation 62: Contents of closure plan: A closure plan contemplated in section 43(3)(d) of the Act, forms part of the EMPR or EMP, as the case may be, and must include:
 - (a) a description of the closure objectives and how these relate to the prospecting or mine operation and its environmental and social setting
 - (b) a plan contemplated in regulation 2(2), showing the land or area under closure
 - (c) a summary of the regulatory requirements and conditions for closure negotiated and documented in the EMPR or EMP, as the case may be
 - (d) a summary of the results of the Environmental Risk Report and details of identified residual and latent impacts
 - (e) a summary of the results of progressive rehabilitation undertaken
 - (f) a description of the methods to decommission each prospecting or mining component and the mitigation or management strategy proposed to avoid, minimise and manage residual or latent impacts
 - (g) details of any long-term management and maintenance expected
 - (h) details of a proposed closure cost and financial provision for monitoring, maintenance and post closure management
 - (i) a sketch plan drawn on an appropriate scale describing the final and future land use proposal and arrangements for the site
 - (j) a record of interested and affected persons consulted
 - (k) technical appendices, if any

3.3 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

Prior to the 8th December 2014, the environmental aspects of prospecting activities were regulated in terms of the MPRDA. Recent legislative amendments and the drive towards a 'one environmental system' have resulted in the inclusion of the requirement for rehabilitation, decommissioning and closure planning and associated financial provisions into the NEMA. Specific sections of the act are extracted below:

- Section 24P: Financial provision for remediation of environmental damage:
 - (1) An applicant for an Environmental Authorisation relating to prospecting, exploration, mining or production must, before the Minister responsible for mineral resources issues the Environmental Authorisation, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts

- (2) If any holder or any holder of an old order right fails to rehabilitate or to manage any impact on the environment, or is unable to undertake such rehabilitation or to manage such impact, the Minister responsible for mineral resources may, upon written notice to such holder, use all or part of the financial provision contemplated in subsection (1) to rehabilitate or manage the environmental impact in question
- (3) Every holder must annually:
 - a. assess his or her environmental liability in a prescribed manner and must increase his or her financial provision to the satisfaction of the Minister responsible for mineral resources
 - b. submit an audit report to the Minister responsible for mineral resources on the adequacy of the financial provision from an independent auditor
- (4) (a) If the Minister responsible for mineral resources is not satisfied with the assessment and financial provision contemplated in this section, the Minister responsible for mineral resources may appoint an independent assessor to conduct the assessment and determine the financial provision. (b) Any cost in respect of such assessment must be borne by the holder in question
- (5) The requirement to maintain and retain the financial provision contemplated in this section remains in force notwithstanding the issuing of a closure certificate by the Minister responsible for mineral resources in terms of the MPRDA to the holder or owner concerned and the Minister responsible for mineral resources may retain such portion of the financial provision as may be required to rehabilitate the closed mining or prospecting operation in respect of latent, residual or any other environmental impacts, including the pumping of polluted or extraneous water, for a prescribed period
- (6) The Insolvency Act (Act No. 24 of 1936), does not apply to any form of financial provision contemplated in subsection (1) and all amounts arising from that provision
- (7) The Minister, or a Member of the Executive Committee (MEC) in concurrence with the Minister, may in writing make subsections (1) to (6) with the changes required by the context applicable to any other application in terms of this Act

3.4 FINANCIAL PROVISIONING REGULATIONS

The prescribed manner in which the environmental liability is to be assessed, is outlined in the Financial Provisioning Regulations, 2015 (GNR1147) was published on the 20th of November 2015. Amendments published under GN 1314 in Government Gazette 40371 on the 26th of October 2016 extend the transitional arrangements by 39 months from the published date for holders of an existing right. The Regulations aim to regulate the determination 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, exploration, 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, exploration, 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
 - Remediation of latent and residual impacts: environmental risk assessment report
- 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 EMPR and the associated right or permit in terms of the MPRDA
 - Provide proof of payment or arrangements to provide the financial provision prior to commencing with any prospecting, exploration, 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
- Regulation 17: The holders of rights have until January 2020 to align with the NEMA Closure Regulations

3.5 OTHER GUIDELINES

The following additional guidelines which relate to financial provisioning and closure have been published in the South African context:

- Best Practice Guideline G5: Water Management Aspects for Mine Closure: This guideline was prepared by the Department of Water and Sanitation and aims to provide a logical and clear process that can be applied by mines and the competent authorities to enable proper mine closure planning that meets the requirements of the relevant authorities. This guideline is aimed primarily at larger scale mines and does not specifically address closure issues related to closure of prospecting activities

4 FINAL REHABILITATION, DECOMMISSIONING AND CLOSURE PLAN (FRDCP)

According to the NEMA GNR 1147 the objective of the final rehabilitation, decommissioning and closure plan, is to identify a post-mining land use that is feasible through-

- a) Providing the vision, objectives, targets and criteria for final rehabilitation, decommissioning and closure of the project
- b) Outlining the design principles for closure
- c) Explaining the risk assessment approach and outcomes and link closure activities to risk rehabilitation
- d) Detailing the closure actions that clearly indicate the measures that will be taken to mitigate and/or manage identified risks and describes the nature of residual risks that will need to be monitored and managed post closure
- e) Committing to a schedule, budget, roles and responsibilities for final rehabilitation
- f) decommissioning and closure of each relevant activity or item of infrastructure
- g) Identifying knowledge gaps and how these will be addressed and filled
- h) Detailing the full closure costs for the life of project at increasing levels of accuracy as the project develops and approaches closure in line with the final land use proposed
- i) h) Outlining monitoring, auditing and reporting requirements

4.1 PROJECT AND ENVIRONMENTAL CONTEXT

This section aims to provide context and focus attention on the material information and issues that have guided the development of this FRDCP. Further details on the project and environmental context can be obtained from the Basic Assessment Report.

4.1.1 PROJECT CONTEXT

Please refer to the detailed description of the project as provided for in Section 2 of the BAR. The planned invasive prospecting activities, which would require inclusion in the FRDCP are extracted and described below.

4.1.1.1 Location

The area of interest occupies a total of approximately 18 340.4536 hectares (ha) and is situated 125 km north of Kroonstad town in the Free State Province of South Africa (Figure 1). The prospecting area is located in the Kroonstad and Koppies Magisterial Districts and extends over 63 farm portions. Table 2 indicates the property details within the Prospecting Right application area.

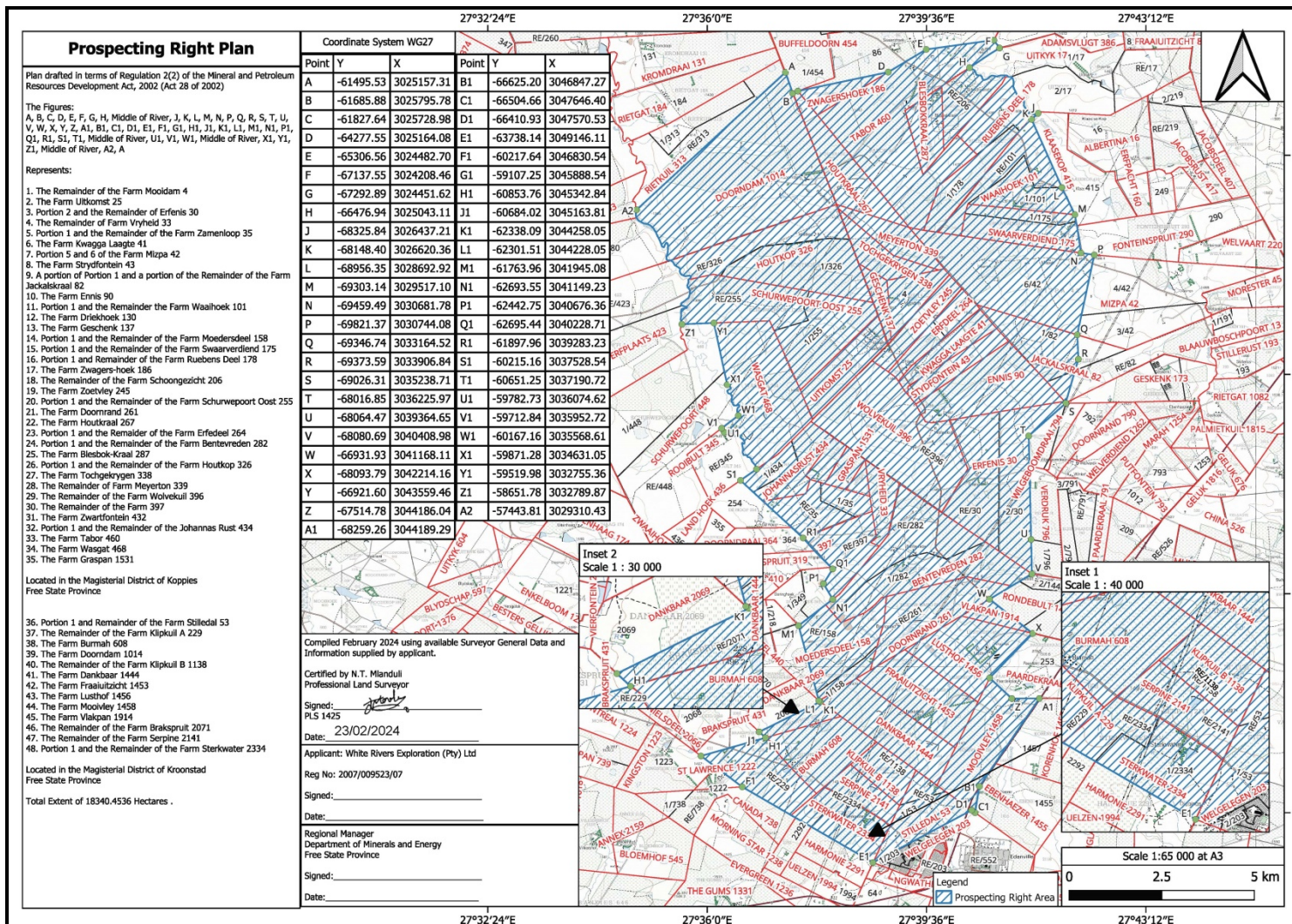


Figure 1: Locality map indicating the farm portions.

Table 2: Locality details.

Application area (ha)	The application area extends over 63 farm portions with a total area of 18 340.4536 ha		
Magisterial district	Kroonstad and Koppies Magisterial Districts		
Distance and direction from nearest town	The application area is located approximately 25 km north of Kroonstad town in the Free State Province		
21 digit Surveyor General Code for each Portion	Farm Name	Portion	SG Code
	Bentevreden 282	Remainder	F01900000000028200000
	Bentevreden 282	1	F01900000000028200001
	Blesbok-Kraal 287	Farm	F01900000000028700000
	Brakspruit 2071	Remainder	F02000000000207100000
	Burmah 608	Farm	F02000000000060800000
	Dankbaar 1444	Farm	F02000000000144400000
	Doornadam 1014 (314)	Farm	F01900000000031400000
	Doornrand 261	Farm	F01900000000026100000
	Driekhoek 130	Farm	F01900000000013000000
	Ennis 90	Farm	F01900000000090000000
	Erfedeel 264	Remainder	F01900000000026400000
	Erfedeel 264	1	F01900000000026400001
	Erfenis 30	Remainder	F01900000000030000000
	Erfenis 30	2	F01900000000030000002
	Farm 397	Remainder	F01900000000039700000
	Fraaiuitzicht 1453	Farm	F02000000000145300000
	Geschenk 137	Farm	F01900000000013700000
	Graspan 1531 (331)	Farm	F01900000000033100000
	Houtkop 326	Remainder	F01900000000032600000
	Houtkop 326	1	F01900000000032600001
	Houtkraal 267	Farm	F01900000000026700000
	Jackalskraal 82	A portion of the Remainder	F0190000000008200000
Jackalskraal 82	A portion of Portion 1	F0190000000008200001	
Johannas Rust 434	Remainder	F01900000000043400000	

Johannas Rust 434	1	F01900000000043400001
Klipkuil A 229	Remainder	F02000000000022900000
Klipkuil B 1138	Remainder	F02000000000113800000
Kwagga Laagte 41	Farm	F01900000000004100000
Lusthof 1456	Farm	F02000000000145600000
Meyerton 339	Remainder	F01900000000033900000
Mizpa 42	5	F0190000000004200005
Mizpa 42	6	F0190000000004200006
Moedersdeel 158	Remainder	F01900000000015800000
Moedersdeel 158	1	F01900000000015800001
Moodam 4	Remainder	F01900000000005300000
Mooivley 1458	Farm	F02000000000145800000
Ruebens Deel 178	Remainder	F01900000000017800000
Ruebens Deel 178	1	F01900000000017800001
Schoongezicht 206	Remainder	F01900000000020600000
Schurwepoort Oost 255	Remainder	F01900000000025500000
Schurwepoort Oost 255	1	F01900000000025500001
Serpine 2141	Remainder	F02000000000214100000
Sterkwater 2334	Remainder	F02000000000233400000
Sterkwater 2334	1	F02000000000233400001
Stilledal 53	Remainder	F02000000000005300000
Stilledal 53	1	F02000000000005300001
Strydfontein 43	Farm	F0190000000001100000
Swaarverdiend 175	Remainder	F01900000000017500000
Swaarverdiend 175	1	F01900000000017500001
Tabor 460	Farm	F01900000000046000000
Tochgekrygen 338	Farm	F01900000000033800000
Uitkomst 25	Farm	F01900000000002500000
Vlakpan 1914	Farm	F02000000000191400000
Vryheid 33	Remainder	F01900000000003300000
Waaiohoek 101	Remainder	F01900000000010100000
Waaiohoek 101	1	F01900000000010100000

	Wasgat 468	Farm	F01900000000046800000
	Wolvekuil 396	Remainder	F01900000000039600000
	Zamenloop 35	Remainder	F0190000000003500000
	Zamenloop 35	1	F0190000000003500001
	Zoetvley 245	Farm	F01900000000024500000
	Zwagers-hoek 186	Farm	F01900000000018600000
	Zwartfontein 432	Farm	F01900000000043200000

5 DESCRIPTION AND SCOPE OF THE PROPOSED ACTIVITIES

Invasive and non-invasive prospecting activities will be undertaken as part of the proposed Prospecting Work Programme (PWP). Non-invasive activities will be undertaken, namely data acquisition, database, map generation and development of geological model, generation of geological models, field visits, geophysical surveys, re-visit key historical drillhole core, and re-logging and re-sampling, logging and sampling of new drillholes, code compliant mineral resource estimation and concept study. An invasive activity will be undertaken, which is the drilling of six (6) diamond core drillholes.

The scope of these activities is as follows:

1. Data Gathering:

Desktop Studies [Year One; Duration: 12 months]

Data Acquisition [Year One; Duration: 12 months]

All historical data detailing the position and economic potential of the target horizons will be revisited. The data obtained will be in the form of historical drillhole information, cadastral maps, geological maps, geophysical surveys (all available existing published gravimetric, radiometric, magnetic, seismic data, remote sensing data, as well as any information pertaining to previous exploration or mining will be consulted and integrated). Data will be scrutinised and verified (QA/QC procedure).

Database, Map Generation and Development of Geological Model: [Year One; Duration: 6 months]

The above data will be compiled into a geological database for the area that will be utilised to present the relevant geological data in useable GIS digital map format. These different data sets will be plotted on a base map of the project and surrounding areas in order to develop a geological model. This model will be used to further refine the exploration programme for the target area.

Field Visit: [Year One; Duration: 1 week]

A field visit will be undertaken to familiarise the applicant with surface features (such as infrastructure, outcrops, water bodies and wetlands) in the project area and to meet the surface landowners. During this visit farm boundaries within the project area and farming activities will be verified. An effort will be made to identify any factors that may impact the exploration programme.

2. Geophysical Survey

Geophysical surveys conducted by mining companies are available and could be acquired without the need for further surveys. A seismic survey was conducted along a line of 60 km long by Anglo Gold Ashanti and initial discussions indicate that it might be possible to purchase this line. Regional aeromagnetic surveys are available and will be acquired and interpreted in conjunction with the borehole and other data. Based on a favourable outcome of the work in Year One, the decision will be taken to purchase this survey.

If the regional geophysical survey is favourable, further ground geophysical investigations (magnetic) will be carried out.

Geophysical Survey and Seismic Survey:	[Year Two; Duration: 12 months]
Data Compilation and Interpretation:	[Year Two; Duration: 12 months]
Refinement of Geological Model:	[Year Two; Duration 12 months]

Should the seismic surveys be purchased, they will be integrated with the geological database and presented in useable GIS digital map formats. This information will also be incorporated into the geological model in order to further define the mineral resource.

3. Re-Visit Key Historical Drillhole Core, and Re-Logging and Re-Sampling: [Year Two; Duration: 6 months]

Based on the initial geological model, specific key drillholes previously drilled in the area will be re-visited and negotiations with the owners undertaken to obtain access to the core. Once access to the historical core is obtained, the core will be re-logged and, if necessary, re-sampled. This activity will allow verification of the historical drillhole logs and consequently increase confidence in the data underpinning the geological model.

4. Drilling

Invasive prospecting will take the form of diamond drilling and will occur in Years 3 and 4 (Figures 2 and 3). This information will then be integrated into the geological model to further define the orebodies, which when combined with the assay information will be utilised to define a mineral resource.

4.1 Drilling of 3 Diamond Drillholes to a Depth of 700 m [Year Three; Duration: 12 months]

Based on the initial geological model established, a diamond drilling programme comprising of three boreholes will be undertaken.

4.2 Revise Geological Model: [Year Three; Duration: 6 months]

The data obtained from the logging and sampling of the historical drillholes will be integrated into the geological model to confirm the geology and drilling targets.

5.1 Drilling of 3 Diamond Drillholes to a Depth of 700 m: [Year Four; Duration: 12 months]

Should the drilling programme prove to be successful in Year 3, an additional three holes will be considered. It is imperative to note that the drilling in Year 4 is dependent on positive outcomes from the drilling in Year 3. Drilling will be conducted in a competent and environmentally responsible

manner including rehabilitation of the drill sites to their original state. Plastic lining will be placed underneath the rig motors to prevent oil seepage. It is noted that no drilling fluids other than water for dust suppression, will be utilised in the case of diamond drilling. Environmental rehabilitation measures will be included in the contract with the drilling company and environmental rehabilitation costs will be included in the drilling costs.

5.2 Finalisation of 3D Geological Model: [Year Five; Duration: 4 months]

Based on the logging and sampling of the core, the 3D geological model will be updated and finalised for use during mineral resource estimation.

5.3 Code Compliant Mineral Resource Estimation: [Year Five; Duration: 4 months]

Utilising the finalised geological model together with historical assay results and any results from the drilling programme, a code compliant mineral resource estimate will be performed.

5.4 Concept Study [Year Five; Duration: 4 months]

Should the exploration activities yield promising results, a concept study will be conducted. During this investigation, mineral resources will be converted to reserves and a conceptual mine plan and schedule shall be established. This will reveal whether the deposit is economically mineable.

Should the proposed exploration activity change, this will be indicated in the form of an Section102 application together with the proposed revised prospecting plan.



Figure 2: A typical drill rig



Figure 3: Typical diamond drill bits.

Table 3: Planned invasive and non-invasive activities.

Year	Activity	Skill(s) Required	Timeframe	Outcome	Timeframe for Outcome	Technical Expert
1	Non-Invasive Prospecting	Qualified geologists (B.Sc. Hons. a minimum qualification)	12 months	Geological model of the area	Month 12	Geologist
	Desktop studies					
	Confirm all available gold (and gold by-products) and coal, geological and geophysical data relevant to prospect					
	Data QA/QC, digitisation and compilation					
	Field visit					
2	Non-Invasive Prospecting	Qualified geologists (B.Sc. Hons. a minimum qualification)	6 months	Refinement of geological model	Month 18	Senior Geologist
	Data synthesis and confirm geological model			If indications are favourable, geophysical orientation surveys will be carried out		
	Possibility of geophysical orientation and regional surveys			Possibility of regional surveys depending on the outcome of the orientation surveys		Geophysicist
				Further refinement of geological model if applicable		
				Report on surface infrastructure and location of collar positions		
2	Based on geological model, key boreholes previously drilled in the area will be re-visited and negotiations with the owners undertaken to obtain access to the core for re-logging and, if necessary, re-sampling	Qualified geologists (B.Sc. Hons. a minimum qualification)	6 months	Further refinement of the geological model based on the revised loggings	Month 24	Senior Geologist
3	Invasive Prospecting	Qualified geologists (B.Sc. Hons. a minimum qualification)	12 months	Drillhole core, logs and sample values	Month 36	Senior Geologist
	Drilling of 3 diamond drillholes to a depth of 700m					
	Non-Invasive Prospecting					
	Revise geological model					
4	Invasive Prospecting	Qualified geologists (B.Sc. Hons. a minimum qualification)	12 months	Drillhole core, logs and sample values	Month 48	Senior Geologist
	Drilling of 3 diamond drillholes to a depth of 700m					
5	Non-Invasive Prospecting	Qualified geologists (B.Sc. Hons. a minimum qualification)	12 months	Final geological model	Month 60	Principal Geologist
	Finalisation of geological model					
	Code compliant mineral resource estimation	Qualified resource geologist		Gold mineral resource		
	Concept study	Geologist		Evaluation of prospect's feasibility		

5.1 DESCRIPTION OF SITE ACTIVITIES

5.1.1 Access Roads

The application area is predominately natural grasslands and is used for commercial dry land agricultural activities (crop production (maize), game and grazing (cattle)). There are existing farm roads. These farm roads will be used to access drilling areas and where there are no access roads, new roads will be created. No multiple roads will be created to access a single area. Roads created to gain access to drilling sites will be rehabilitated on completion of the drilling operations, to the satisfaction of the relevant landowner.

5.1.2 Water Supply

It is unknown if there are any water boreholes situated on-site and if access and supply will be granted by landowners. It is anticipated that water brought onto site will be sourced from the Local Municipality. Water will be trucked from these sources to the identified drill sites. The required water includes service water (for operating machinery and dust suppression), and potable water (for domestic use within the drilling sites).

Continuous water supply will be required during drilling. An on-site water storage tanks with a capacity of at least 15 000 litres for water supply to the drill may be required. Additional water requirements relate to the potable water supply for employees and workers. A temporary 260 litre on-site vertical water storage tank for drinking water is recommended during the drilling operations.

5.1.3 Ablution

Ablution facilities at the drill site will be required and may involve the installation of drum or tank type portable toilets. The toilets should be emptied twice every week through the services of a registered sewage waste service provider. The ablution facilities must be provided at a ratio of 15: 1 (15 people per 1 toilet).

5.1.4 Temporary Office Area

A temporary shaded site office area may be erected on site. The office must be established away from the water drainage lines. A shaded eating area may be provided.

5.1.5 Accommodation

No accommodation for staff and workers will be provided on-site and all persons will be accommodated in nearby towns (i.e., Kroonstad or Koppies). Workers will be transported to and from the prospecting site on a daily basis. Night security staff may be employed once equipment is stationed on-site. No fires will be allowed on site.

5.1.6 Storage of Dangerous Goods

During drilling activities, limited quantities of diesel fuel, oil and lubricants may be stored on-site. The only dangerous good that may be stored is diesel fuel. A maximum amount of 60 m³ of diesel fuel may be stored in above ground diesel storage tanks with elevated bunded walls.

5.1.7 Equipment and/or Technology That May Be Used

- A drill rig mounted on a truck or trailer
- A water tanker
- 4x4 Bakkie/s
- Geological modelling software

Figure 4 illustrates the prospecting activities and potential requirements associated with each phase.

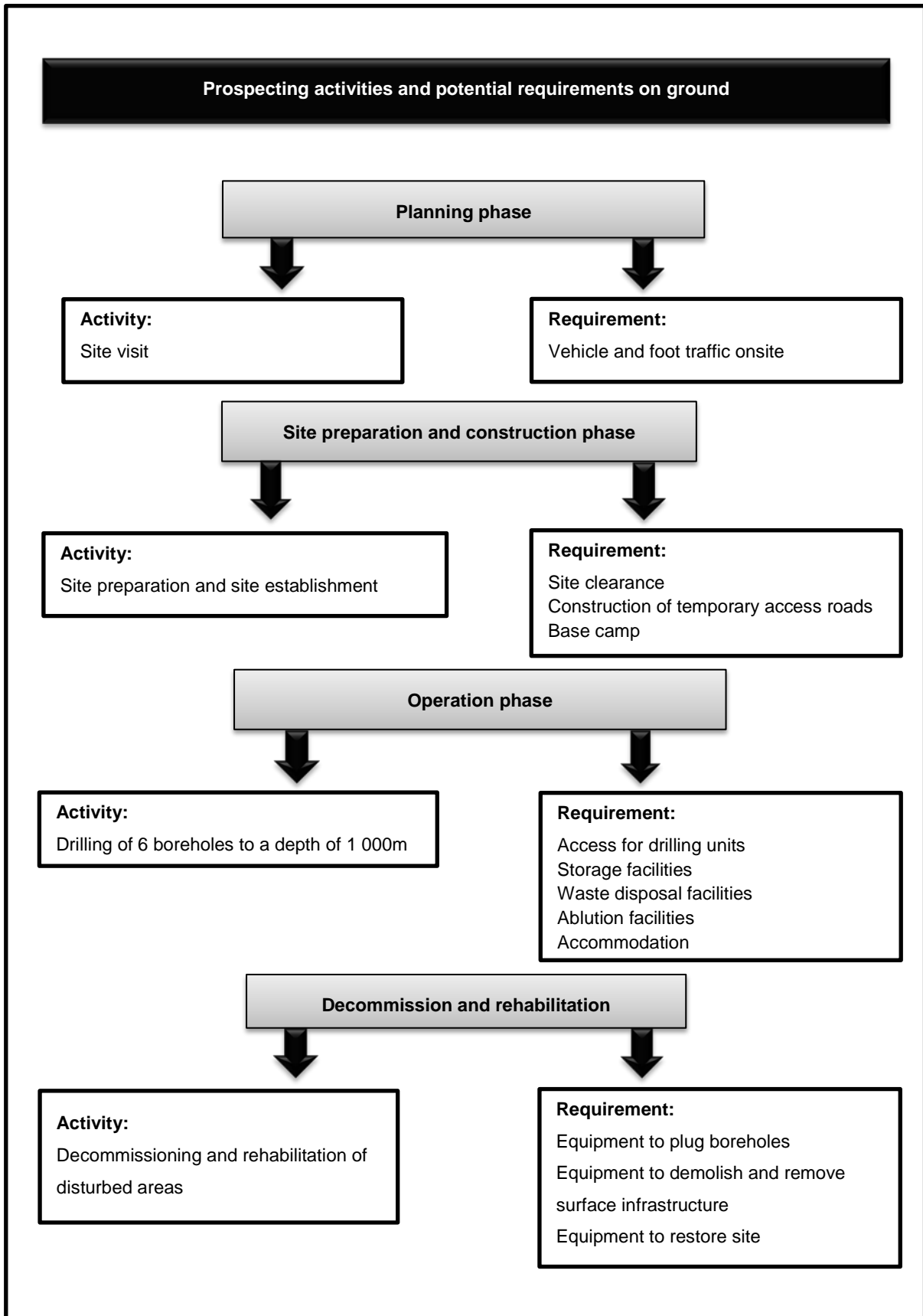


Figure 4: Prospecting activities and potential requirements associated with each phase.

5.2 ENVIRONMENTAL AND SOCIAL CONTEXT

The description and definition of the pre-prospecting environmental context is critical to ensure that the ultimate closure objectives and associated end land-use are achieved. In this regard please refer to Section 8 of the BAR for a detailed description of the receiving environment applicable to this specific project. Based on the description of the receiving environmental and social context, this FRDCP is based on the understanding that the predominant land-uses on the application area are:

1. Cultivated commercial fields
2. Wetlands
3. Low shrub land

The description of the baseline environment (on site and surrounding) was obtained from the studies undertaken by the specialist team and in conjunction with Shango Solutions. All specialist studies undertaken for the proposed project are included as supporting technical appendices to the BAR. The key environmental aspects related to the Prospecting Right area are summarised below.

5.2.1 Soils

Soil reflects the influence of geology, topography and climate over time and is an important indicator of agricultural potential. The geology of the drillhole sites constitutes sedimentary mudstones and sandstone mainly of the Adelaide subgroup (Beaufort Group, Karoo Supergroup), as well as those of the Eccca Group (Karoo Supergroup found in the extreme northern section, giving rise to vertic, melanic and red soils (typical forms are Arcadia, Bonheim, Kroonstad, Valsrivier and Rensburg

The dominant soil type is Bd, closely followed by Bc, Ae, and Ba. These soils are mainly red and yellow apedal soils. They range from moderate to high fertility status with large variability in texture, mostly sandy loam to sandy clay loam. The Bd, Bc, and Ba types contain a greyish subsoil layer where iron and manganese accumulate in mottles due to a seasonally fluctuating water table. These mottles eventually harden to form concretions which cause restricted water infiltration (AGIS, 2015).

5.2.2 Geology

The Free State Goldfield is typically overlain by 500 m of Karoo Supergroup strata, consisting predominantly of horizontally bedded sandstones and shales of the Eccca Group. The Eccca Group contains coal at shallow depths which might be exploitable. In addition to gold, the primary prospecting target, silver, uranium, sulphur, diamonds, rare earths and platinum group metals are currently and have been historically, extracted as by-products of gold. Base metals (cobalt, copper, manganese, molybdenum, nickel, lead, tungsten and zinc) could potentially be present in mafic intrusions (Figure 8).

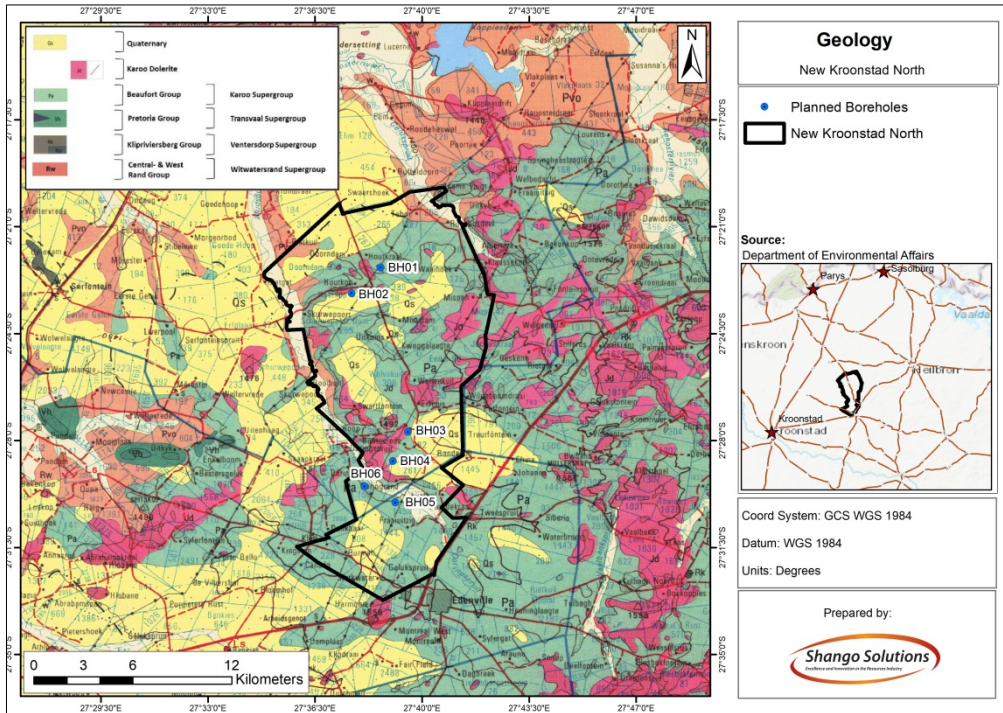


Figure 5: Geology of the project area.

5.2.3 Topography

The landscape within the project site is relatively flat with an incision running through the site where elevation decreases because of a perennial stream cutting through the landscape (Figure 7). Average elevations at the borehole sites are 1 470 meters above mean sea level (mamsl). The highest point of elevation is at borehole 1 (1 490 mamsl) and lowest at various borehole points at 1 445 mamsl.

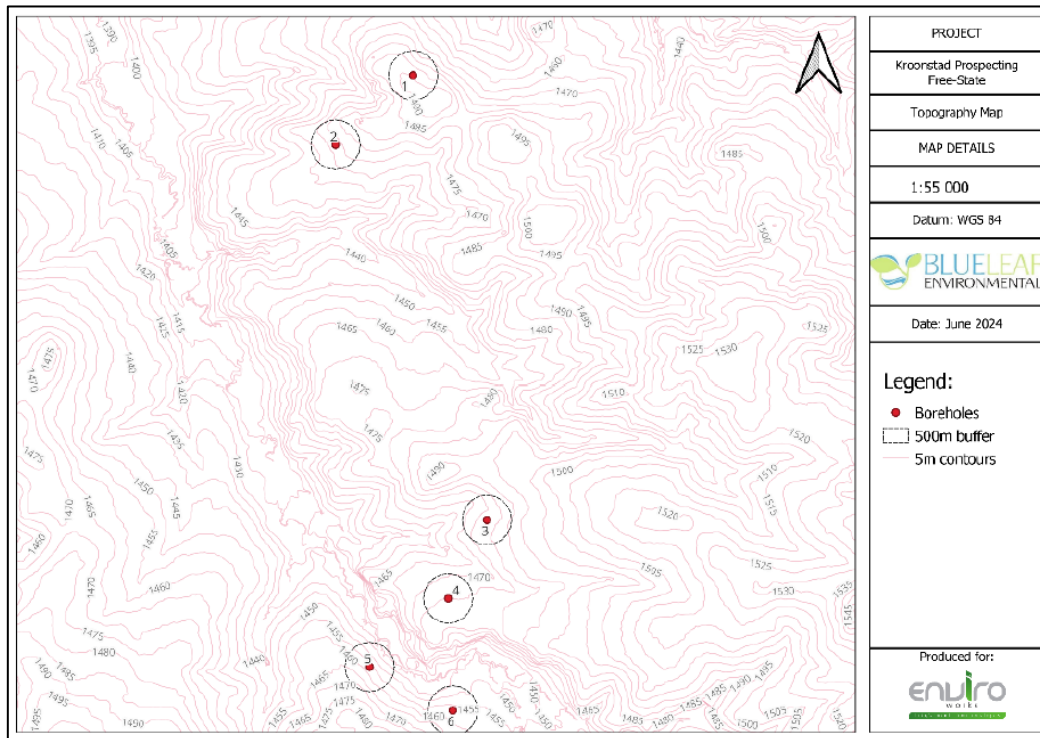


Figure 6: Topography of the proposed sites and surrounding areas.

5.2.4 Climate

The climate of the area is characterised by mild to hot summer temperatures in excess of 30°C and extremely cold winter temperatures with severe frost during winter months. The temperature averages 17.4 °C. January has the highest average temperature, with a recorded maximum of 22.6 °C, while July is the coldest time of the year with temperatures averaging at around 9.7 °C.

Summer rains occur with a mean annual precipitation of 500 millimetres between November and March. The month with the least amount of precipitation is July (7 mm), while December has the highest averages with a mean value of 107 mm.

5.2.5 Culture and Heritage Assessment

Kroonstad was established as a town in 1855. During the Second Boer War, from 13 March to 11 May 1900, the city became the capital of the Orange Free State, and subsequently the site of a British concentration camp to contain Boer women and children (CTS, 2024). Kroonstad still boasts much of the inherent rugged beauty which led the Voortrekkers to establish the town where they did and it is situated in an area characterised by open spaces and an abundant variety of vegetation that makes it particularly beautiful. According to Van Schalkwyk (2013), most farmsteads were burned down during the Anglo-Boer War, with the result that very little of the built environment dates to the 19th century. According to Matenga (2019), the Black and Coloured townships are significant as landscapes of segregation occupying the north-western fringe of the CBD, while the exclusive white suburbs were located northeast of the town and south of the Valsch River.

According to Van Schalkwyk (2013), the cultural landscape qualities of the region essentially consist of a rural setup. In this the human occupation is made up of a pre-colonial element consisting of limited Stone Age and Iron Age occupation, as well as a much later colonial (farmer) component. This was soon followed by the development of a number of urban centres or towns. Originally these mostly served the surrounding farming communities, but with the discovery of the Free State Gold Field, they expanded rapidly in order to serve this industry as well.

Prior to colonial settlement in 1855, the area proposed for prospecting formed part of a landscape that was occupied by indigenous Khoer herders and San hunter-gatherers. These indigenous communities were displaced by Bantu-speaking people who began to occupy the area in the Iron Age. According to Van Schalkwyk (2013), sites dating to the Late Iron Age are known to occur in the region, especially in the vicinity of the Sandrivier, whereas some are known to occur to the northwest of Ventersburg. These are typical stone walled sites that are linked with Sotho speakers and date to the period after 1600.

As such, it is possible that Early, Middle or Later Stone Age artefacts may be located within the proposed development footprint. Furthermore, it is possible that evidence of Iron Age settlement may also be located within the proposed development areas. Recent archaeological field assessment conducted for the Vrede and Rondawel PV Facilities located approximately 10 km from the proposed development area identified some cultural remains but with varied value and preservation (Figure 4). The isolated and scattered lithic artefacts identified are typical of a deflated landscape and have very limited cultural value given that they have been accumulated and modified by various natural processes to their current ex situ state. The stone piles found in the southwest of the property are more noteworthy (Grade IIIA) and require sensitive treatment.

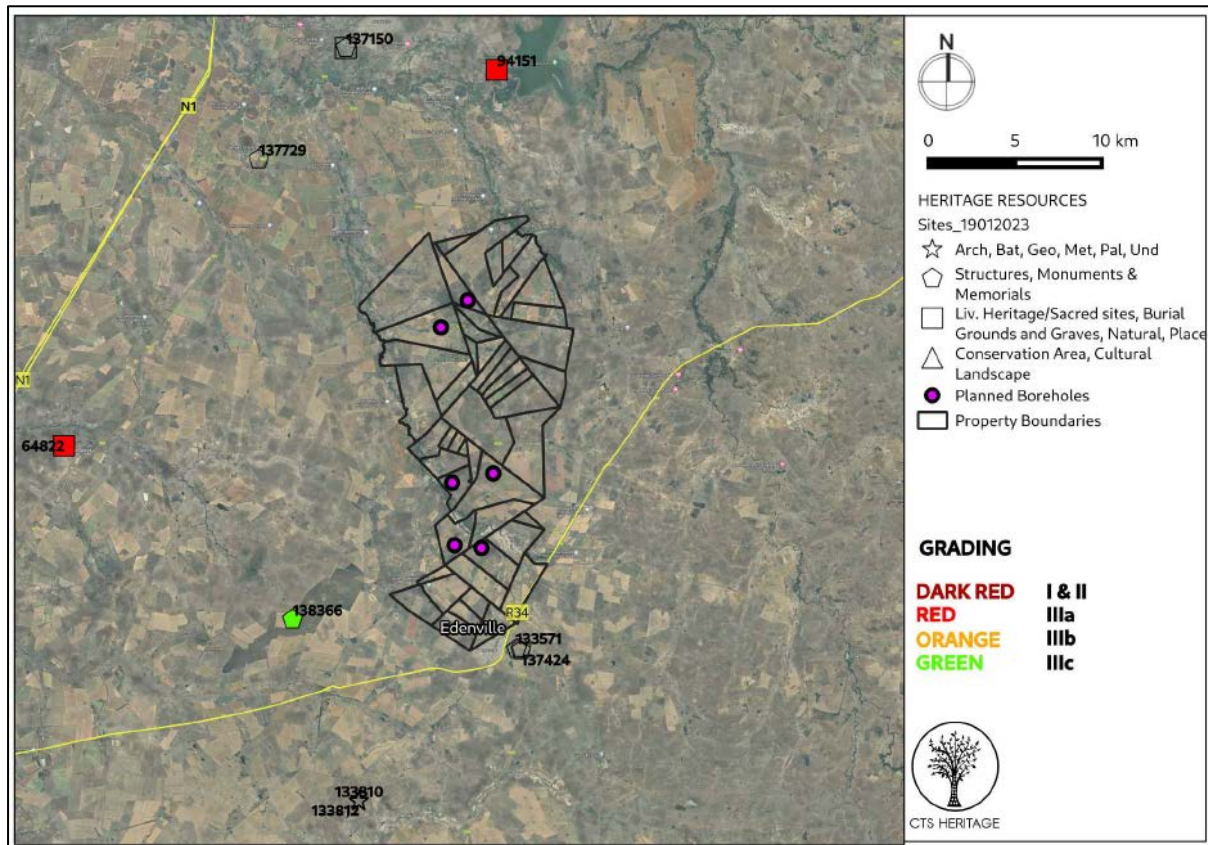


Figure 7: Heritage resources previously identified near the project area.

It is likely that similar heritage resources may be present within this development area. As such, it is recommended that an archaeological assessment of the areas proposed for development is completed and anticipated impacts to such resources assessed.

No cultural or heritage features have been identified within the project area. A Notice of the application for a Prospecting Right and Environmental Authorisation has been uploaded to the South African Heritage Information System (SAHRIS), hosted by the South African Heritage Resources Agency's (SAHRA) website.

5.2.6 Palaeosensitivity

The project area is underlain by sediments of the Karoo Supergroup including the Adelaide Subgroup (Pa), which have very high palaeontological sensitivity. This formation forms part of the Dicyonodon and Lystrosaurus assemblage zones and is known to include fossils of fish, amphibians, reptiles, therapsids and vertebrate burrows. Diverse terrestrial and freshwater tetrapods of Pristerognathus to Dicyonodon Assemblage Zones (amphibians, true reptiles, synsids – especially therapsids) have been found in this formation, as well as, palaeoniscoid fish, freshwater bivalves, trace fossils (including tetrapod trackways), sparse to rich assemblages of vascular plants (Glossopteris Flora, including spectacular petrified logs) and insects.

According to the SAHRIS Palaeosensitivity Map (Figure 8), the areas proposed for development are underlain by sediments of moderate to very high palaeontological sensitivity.

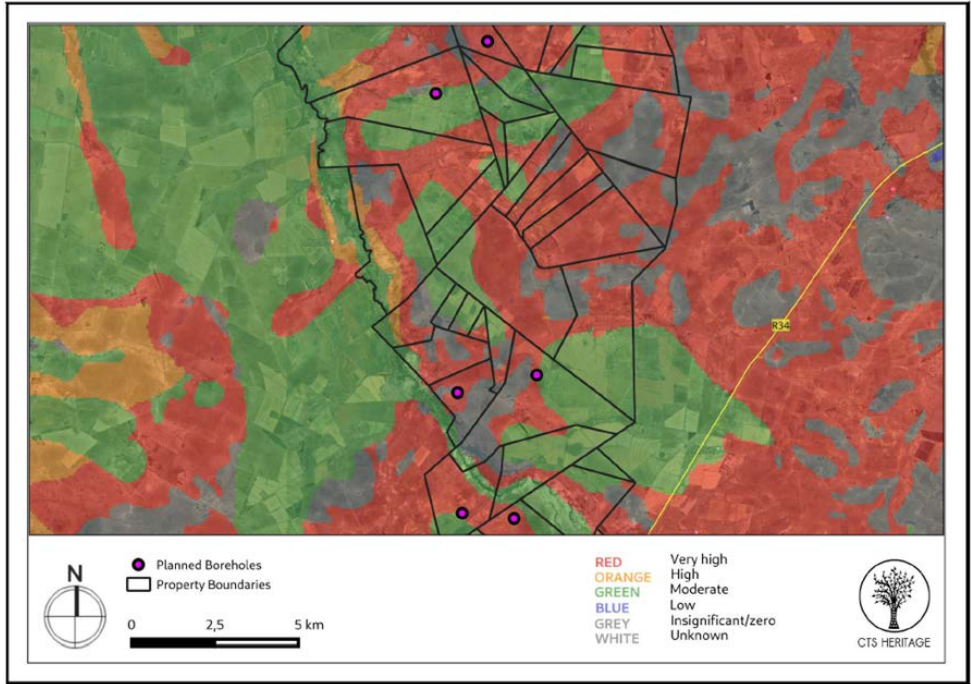


Figure 8: Palaeosensitivity map indicating Low to Very High fossil sensitivity underlying the project area

5.2.7 Flora

The application area falls within the grassland biome (MP302), characterised as areas dominated by grasses and herbaceous vegetation of relatively short and simple structure. There are two vegetation units naturally occurring in the area. These vegetation units are classified as Central Free State Grassland and Vaal-Vet Sandy Grassland (Mucina and Rutherford, 2006). All six proposed drillholes are located within the Vaal-Vet Sandy Grassland (Figure 9).

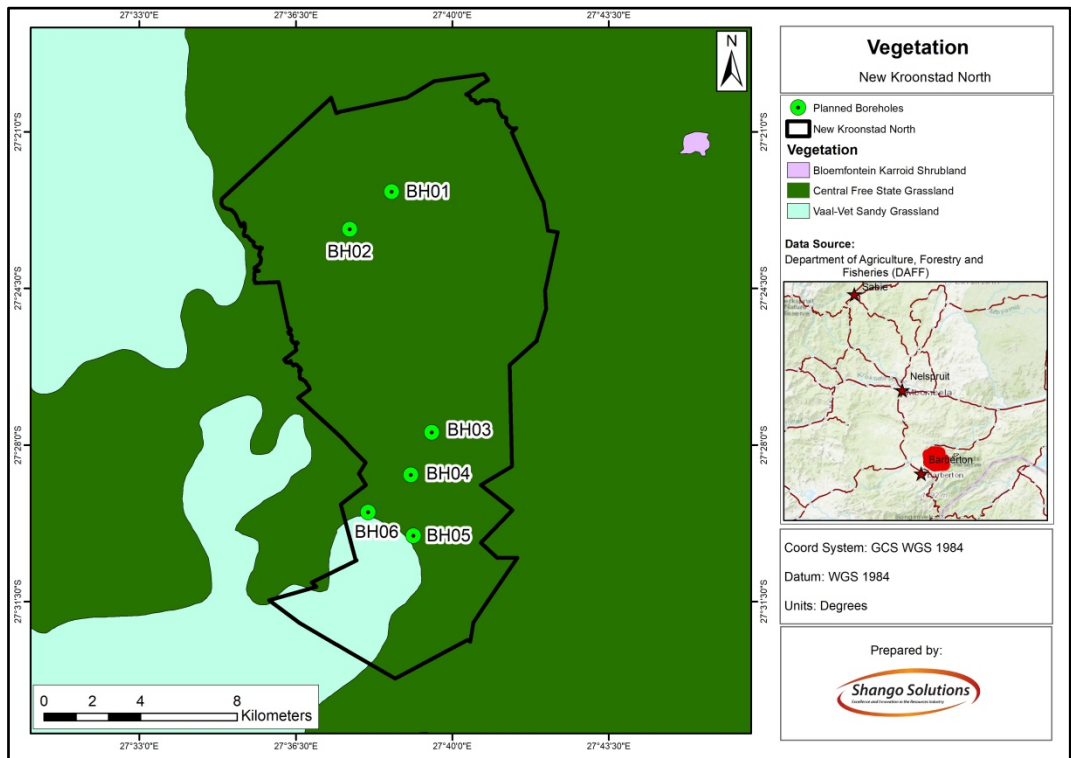


Figure 9: Vegetation of the application area.

The vegetation units are discussed in more detail below:

Central Free State Grassland (Gh 6)

Central Free State Grassland, also within the grassland, is found in the Free State and also marginally in the Gauteng Province. Other major settlements located within this unit include Kroonstad, Ventersburg, Steynsrus, Winburg, Lindley and Edenville. The vegetation unit can be found at an altitude of 1 300 –1 640 mamsl. The Central Free State Grassland supports mainly short grassland. In natural condition the dominant grassland type is *Themeda triandra* while *Eragrostis curvula* and *E. chloromelas* become dominant in degraded habitats. Dwarf karoo bushes establish in severely degraded clayey bottomlands. Overgrazed and trampled low-lying areas with heavy clayey soils are prone to *Acacia Karoo* encroachment.

Important taxa include:

- Graminods: *Aristida adscensionis* (d), *A. congesta* (d), *Cynodon dactylon* (d), *Eragrostis chloromelas* (d), *E. curvula* (d), *E. plana* (d), *Panicum coloratum* (d), *Setaria sphaceolata* (d), *Themeda triandra* (d), *Tragus koelerioides* (d), *Agrostis lachnantha*, *Andropogon appendiculatus*, *Aristida bipartita*, *A. canescens*, *Cymbopogon pospischilii*, *Cynodon transvaalensis*, *Digitaria argyrograpta*, *Elionurus muticus*, *Eragrostis lehmanniana*, *E. micrantha*, *E. obtusa*, *E. racemosa*, *E. trichophora*, *Heteropogon contortus*, *Microchloa caffra*, *Setaria incrassata*, *Sporobolus discosporus*
- Herbs: *Berkheya onopordifolia* var. *onopordifolia*, *Chamaesyce inaequilatera*, *Conyza pinnata*, *Crabbea acaulis*, *Geigeria aspera* var. *aspera*, *Hermannia depressa*, *Hibiscus pusillus*, *Pseudognaphalium luteoalbum*, *Salvia stenophylla*, *Selago densiflora*, *Sonchus dregeanus*. Geophytic Herbs: *Oxalis depressa*, *Raphionacme dyeri*
- Succulent Herb: *Tripteris aghillana* var. *integrifolia*
- Low Shrubs: *Felicia muricata* (d), *Anthospermum rigidum* subsp. *pumilum*, *Helichrysum dregeanum*, *Melolobium candicans*, *Pentzia globosa*

Central Free State Grassland is considered **Vulnerable**. Of the 24% conservation target, only small portions areas are subject to statutory conservation (Willem Pretorius, Rustfontein and Koppies Dam Nature Reserves) as well as some protection in private nature reserves. Almost a quarter of the area has been transformed either for cultivation or by building of dams (Allemandskraal, Erfenis, Groothoek, Koppies, Kroonstad, Lace Mine, Rustfontein and Weltevrede). No serious infestation by alien flora has been observed, but encroachment of Dwarf Karoo shrubs becomes a problem in the degraded southern parts of this vegetation unit.

Vaal-Vet Sandy Grassland (Gh 10)

Vaal-Vet Sandy Grassland within the grassland biome is the most dominant vegetation unit in the project application area and it can be found in the North West and Free State Provinces, south of Lichtenberg and Ventersdorp and stretching southwards to Klerksdorp, Leeudoringstad, Bothaville and Brandfort areas in the North of Bloemfontein. The vegetation unit can be found at an altitude of 1260 - 1360 mamsl. Vaal-Vet Sandy Grassland supports mainly low tussock grasslands with an abundant karroid element. The dominance of *Themeda triandra* is an important feature of this vegetation unit. Important taxa include:

- Graminoids: *Antheophora pubescens* (d), *Aristida congesta*, *Chloris virgata* (d), *Cymbopogon caesius* (d), *Cynodon dactylon* (d), *Digitaria argyrograpta*, *Elionurus muticus*, *Eragrostis chloromelas* (d), *E. lehmanniana* (d), *E. plana* (d), *E. trichophora* (d), *Heteropogon contortus* (d), *Panicum gilvum* (d), *Setaria Sphacelata* (d), *Themeda triandra* (d), *Targus berteronianus* (d), *Brachiaria serrata*, *Cymbopogon pospischilii*, *Digitaria eriantha*, *Eragrostis curvula*, *E. obtusa*, *E. superba*, *Panicum coloratum*, *Pogonarthria squarrosa*, *Trichoneura grandiglumis*, *Triraphis andropogonoides*

- Herbs: *Stachys spathulata* (d), *Berleria macrostegia*, *Berkheya onopordifolia* var. *onopordifolia*, *Chamaesyce inaequilatera*, *Geigeria aspera* var. *aspera*, *Helichrysum caespitium*, *Hermannia depressa*, *Hibiscus pusillus*, *Monsonia burkeana*, *Rhynchosia adenodes*, *Selago densiflora*, *Vernonia oligocephala*.
- Geophytic Herbs: *Bulbine narcissifolia*, *Ledebouria marginata*
- Succulent Herbs: *Tripteris aghillana* var. *integrifolia*
- Low Shrubs: *Felicia muricata* (d), *Pentzia globosa* (d), *Anthospermum rigidum* subsp. *pumilum*, *Helichrysum dregeanum*, *H. Paronychioides*, *Ziziphus zeyheriana*.

Vaal-Vet Sandy Grassland is considered **Endangered** and is a **Protected** ecosystem under the National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004). Only 0.3 % of this vegetation unit is statutorily conserved within the Bloemhof Dam, Faan Meintjies, Sandveld, Schoonspruit, Soetdoring, and Wolwespruit Nature Reserves. A loss in the vegetation type is generally associated with transformed land for cultivation, for commercial crops and grazing for cattle and sheep. . Historically Gh10 covered the largest portion of the study area, but was virtually totally destroyed due to crop cultivation and other agricultural activities.

The on-site investigation indicates that vegetation in various drillhole points is not pristine Central Free-State Grassland. The following fine-scaled vegetation units were identified:

1. Intact Grassland (BHs 1,3,5 and 6) (figure 10)
2. Agricultural maize fields (BHs 2 and 4) (Figure 11)



Figure 10: Photographs illustrating drillholes BH01, BH03, BH05 and BH06 locations on intact grassland areas.

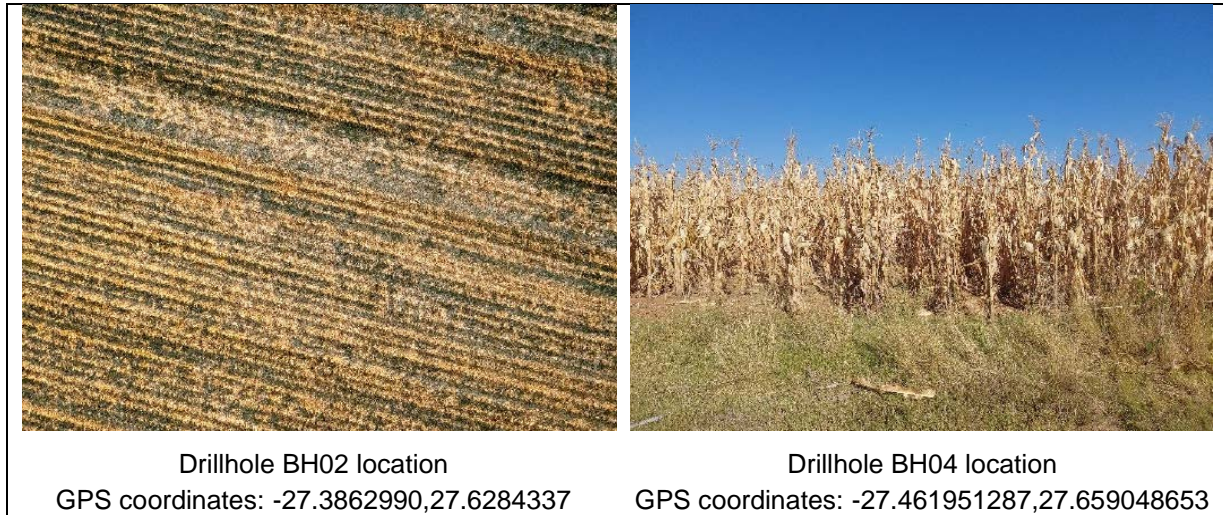


Figure 11: Photographs illustrating drillholes BH02 and BH04 locations on transformed agricultural landscapes.

No sensitive or protected plant species were observed at any of the proposed drill site locations. There are no anticipated plant species of conservation concern possibly occurring on site. Three exotic species that are listed as 'Not Evaluated' (i.e. exotic) on the Red List of South African Plants were identified on site.

5.2.8 Fauna

Although a site visit did not identify any animal species or traces thereof, prints, scat, nests, etc. are occurring on site, and some species may still occur on site. These include reptiles, frogs, birds and mammals. A desktop study did not identify any sensitive animal species to occur on site. However, the following species of conservation concerns are expected to occur on site:

1. Birds
 - *Hydroprogne caspia* (Caspian Tern) (Figure 12)
 - *Sagittarius serpentarius* (Secretary bird) (Figure 12)
2. Mammal/s
 - *Ourebia ourebi ourebi* (Oribi) (Figure 13)
3. Reptile/s
 - Sensitive animal species # 15



Figure 12: Birds potentially occurring in the project area.



Figure 13: Mammal that is expected to be present in the project area.

5.2.9 Surface Hydrology

The application area falls in the Vaal Water Management Area (Figure 14), which includes major rivers such as the Vaal, Wilge, Liebenbergsvlei, Mooi, Renoster, Vals, Sand, Vet, Harts and Molopo Rivers.

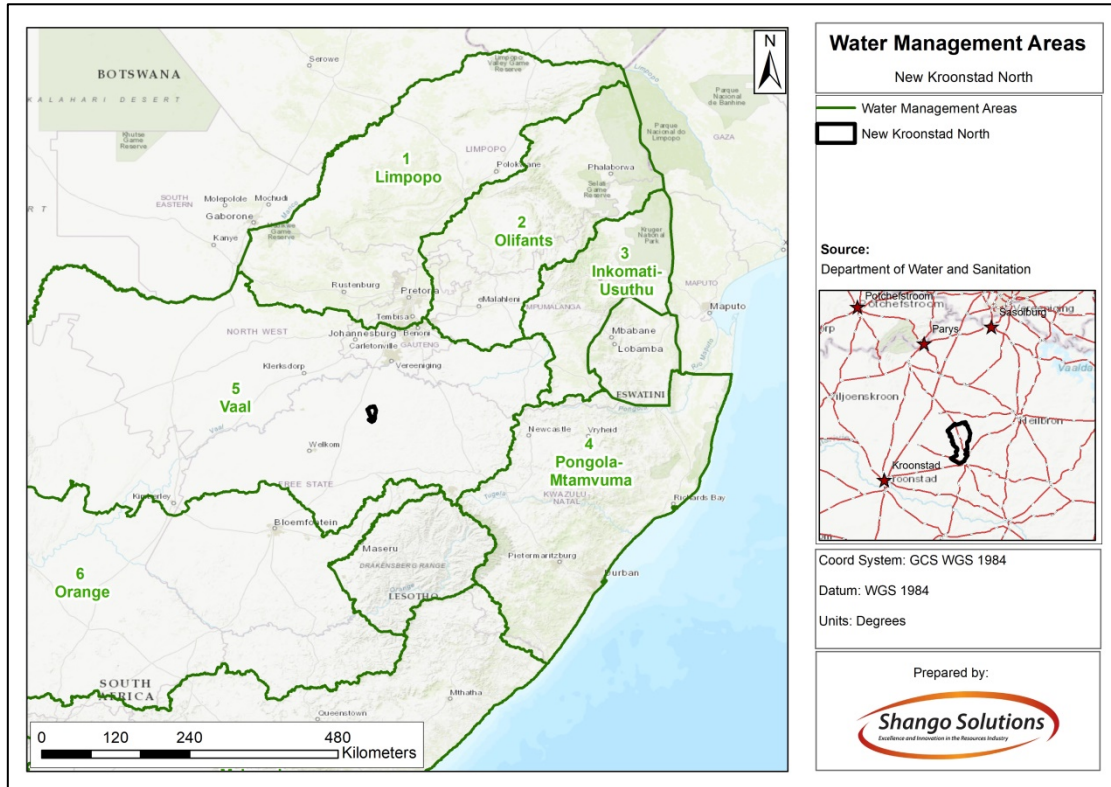


Figure 14: Water Management Areas of central and northern South Africa.

The Vaal Water Management Area comprises 12 tertiary catchment areas and the application area is specifically situated in the C70D Quaternary Catchment (Figure 15).

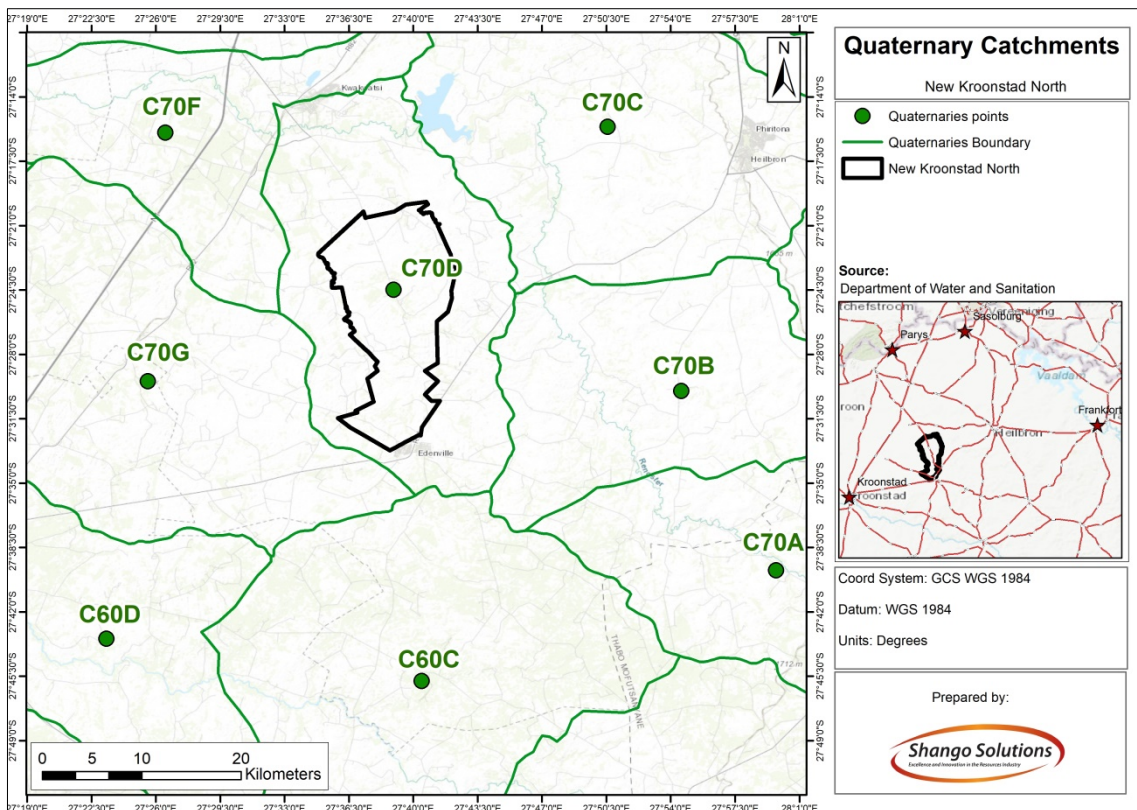


Figure 15: Quaternary Catchment Areas of the study and surroundings.

The rivers present in the proposed application area are in a largely natural present ecological state (class B) and a moderately modified condition (class C) (Figure 16). The moderately modified river condition that is largely present in the WMA is due to impacts from agricultural activities and urban development.

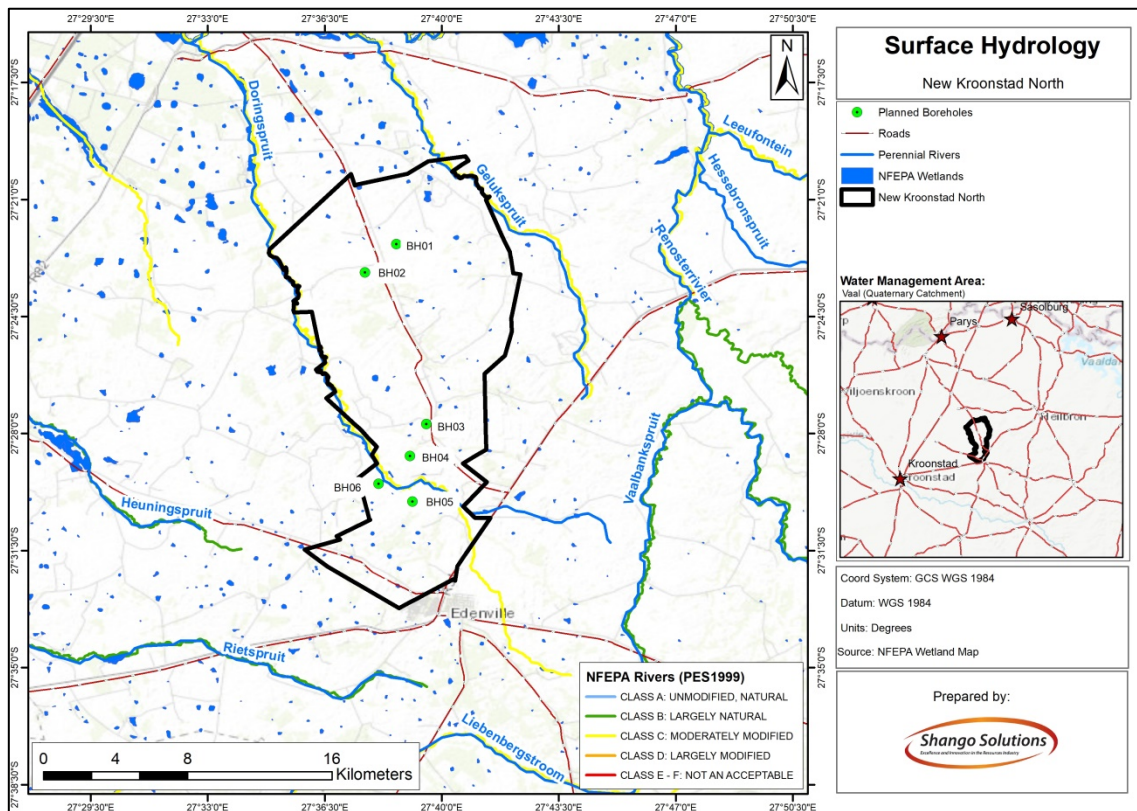


Figure 16: Map depicting the surface hydrology of the application area.

Six non-perennial drainages, and five wetlands were found within the Secondary Project Area Of Influence (PAOI) of each drillhole point. None of the drainages found within the Secondary PAOI are classified as National Freshwater Ecosystem Priority Area (NFEPA) systems by the South African National Biodiversity Institute (SANBI). These systems have been classified in terms of their hydrogeomorphic characteristics, as non-perennial drainages that do not flow continuously throughout the year, although pools may persist. Flow regime is unpredictable. They are found within the Central Free State Grassland vegetation with little to no alien species present.

The aquatic biodiversity can be summarised as follows:

- None of the rivers and wetlands located within the secondary PAOI will be directly affected
- No drillhole is in a 100 m DWS Regulated Buffer (called the River Regulated Area or RRA)
- Drillhole 4 is the only location point located in a 500 m DWS Regulated Buffer (called the Wetland Regulated Area or WRA)
- The proximity of the drillhole 4 point to both the DWS River-and Wetland Regulated Areas will trigger an approval requirement from the DWS

- To avoid approval requirements from the DWS, it is recommended that drillhole 4 be relocated outside of the DWS Regulation Areas

A detailed sensitivity map for the project area and immediate surroundings was developed based on the identified aquatic characteristics found within the site (Figure 17).

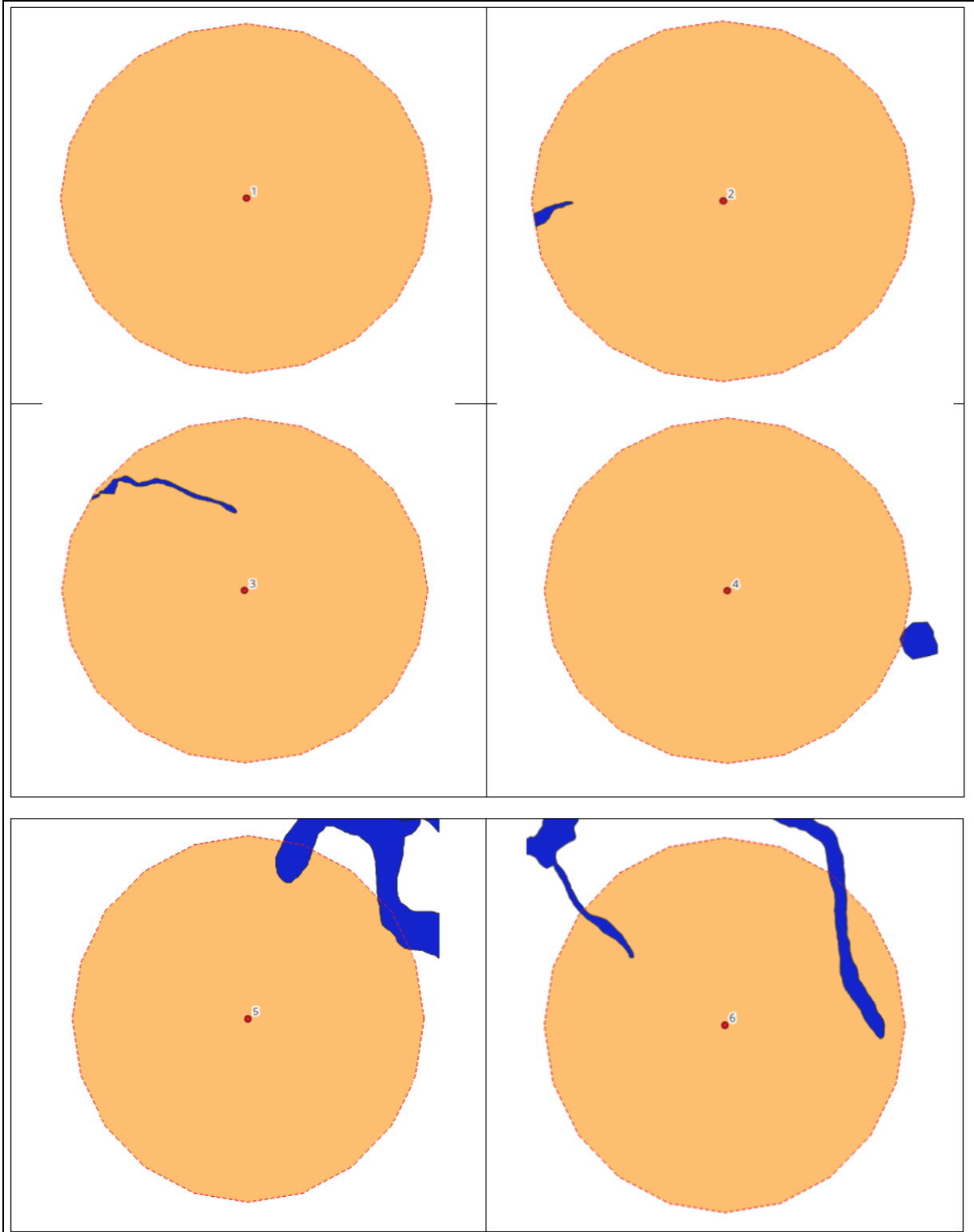


Figure 17: Sensitivity map for the proposed six drillhole sites and surrounding Secondary PAOI.

5.3 STAKEHOLDER ISSUES AND COMMENTS

A public participation process as required by the NEMA 2014 EIA Regulations (as amended) was undertaken for the proposed prospecting. In this regard, Interested and Affected Parties were provided with an opportunity to review and comment on this report and the Draft BAR and EMPR, thereby contributing to the Basic Assessment Process and assisting in identifying any additional risks or impacts that may be experienced.

Members of the public, local communities and stakeholders are invited to comment on the Draft BAR and EMPR, which was made available for public review and comment from the 18th June 2024 to the 26th July 2024. The draft report was submitted to the Department of Mineral Resources and Energy and a hard copy of the draft report was available at the following public venue for review:

Venue	Address	Contact details
Koppies Public Library	Dirkie Uys Street, Koppies, 9540, Free State Province	056 777 1713

An electronic copy of the draft Basic Assessment Report and Environmental Management Programme Report was available on the Shango Solutions website (<http://www.shango.co.za/public-documents/>), for download. All comments on the report must be submitted to Shango Solutions, and a copy of such comments can be submitted to the decision-making authority, Department of Mineral Resources and Energy.

Table 4 provides the comments and responses received during the public consultation process. The full report containing the comments and responses of the I&APs is also included as part of Appendix F of the BAR and EMPR.

Table 4: Comments raised by I&APs

I&AP	Method	Date comments received	Comment received	Response issued
Key Stakeholders				
Landowner/s				
Doorndam JFJ Pty Ltd (Heilie Combrinck Combrinck Jan Frederik Johannes Gezina Roux)			No comment received to date.	
Andries Hendrik Josephus Jeremia Swart			No comment received to date.	
Anna Elizabeth Steyn Gerhardus Steyn			No comment received to date.	
Johannes Benjamin Van Zyl			No comment received to date.	
Copper Lake Investments 237 CC (Rober Weighton (Cameron Family Trust) Christian Gouws)			No comment received to date.	
Junophase Pty Ltd (Jan Abraham Erasmus)			No comment received to date.	
Riemland Stroperdienste CC (Louwrens Johannes Christoffel Erasmus Jan Abraham Erasmus Bouwer Troskie Nel Johannes Petrus Van Niekerk)			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Galcoline Pty Ltd (Louwrens Johannes Christoffel Erasmus)			No comment received to date.	
Susanna Johanna Le Roux			No comment received to date.	
Andries Bernadus Wessels			No comment received to date.	
Andrea Roux			No comment received to date.	
Sernick 2021 Pty Ltd (Johannes Diederik Erasmus David Jacobus Niemann)			No comment received to date.	
Kanzili Hunting Safaris Pty Ltd (Pedro Hernandez Muguruza Pieter Johannes Van Zyl)			No comment received to date.	
Jodef Simon Pretorius Lynette Pretorius			No comment received to date.	
The Farm Sachsen Weimar No 540 Pty Ltd (Motlokoa Annah Motlokoa Mofolo Paul)			No comment received to date.	
Water Valley Farm Pty Ltd (Andrew Mphosi Letsoela Liokhwane Letsoela Ralitapole Joseph Letsoela Simon Ranthomeng Letsoela)			No comment received to date.	
Barend Johannes Wessels			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Jan Abraham Erasmus			No comment received to date.	
National Government of the Republic of South Africa			No comment received to date.	
Nompumelelo Maduna Family Trust			No comment received to date.	
L J C E Trust			No comment received to date.	
Burmah Trust			No comment received to date.	
Vucajo Trust			No comment received to date.	
Mosia Trust			No comment received to date.	
Evert Du Toit Familie Trust			No comment received to date.	
Daantjie Serfontein Trust			No comment received to date.	
Hendrik Klopper Gesinstrust			No comment received to date.	
Wanganella Trust			No comment received to date.	
Estate			No comment received to date.	
Ivory Game Breeding Family Trust			No comment received to date.	
Willem De Jongh Trust			No comment received to date.	
S & M Fourie CC			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Willem Jacobus Serfontein Alida Booyens Anna Desiree Serfontein			No comment received to date.	
Ngwathe Local Municipality			No comment received to date.	
Sara Johanna Smit			No comment received to date.	
Adjacent Landowners				
Sernick 2021 Pty Ltd (Johannes Erasmus Diederik) David Jacobus Niemann)			No comment received to date.	
Thamphoreya Engineering & Consulting Pty Ltd (Tumelo Sylvester Seqhobane)			No comment received to date.	
Bartholomeus Klopper			No comment received to date.	
Marcel Van Heerden Eugene			No comment received to date.	
Morne De Wet Hendrik Christoffel De Wet Willem Johannes Schutte Ignatius Nicolaas Schutte Susara Elizabeth Meintjes Barend Jacobus Johannes Meintjes			No comment received to date.	
Dagern Beleggings Cc (Gertruida Petronella Harmse)			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Galcoline Pty Ltd (Louwrens Johannes Christoffel Erasmus)			No comment received to date.	
L J C E Trust (Elsje Cornelia Bezuidenhout Elizabeth Johanna Serfontein Susara Elizabeth Van Der Westhuizen)			No comment received to date.	
Louwrens Johannes Christoffel Le Roux			No comment received to date.	
Nkeza Pty Ltd			No comment received to date.	
Izak Andries Van Niekerk			No comment received to date.	
Francois Fivaz			No comment received to date.	
J J Erasmus Trust			No comment received to date.	
S J Le Roux Trust			No comment received to date.	
Willem De Jongh Trust			No comment received to date.	
L J C E Trust			No comment received to date.	
Ngwathe Local Municipality			No comment received to date.	
Gideon Jacobus Johannes Swart			No comment received to date.	
Ramolotsi Trust			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Evert Du Toit Familie Trust			No comment received to date.	
C J Theron Trust			No comment received to date.	
Kriel Trust			No comment received to date.	
Wanganella Trust			No comment received to date.	
Rondebult Trust			No comment received to date.	
Chris Jonker Trust			No comment received to date.	
H P Serfontein Trust			No comment received to date.	
Reno Trust			No comment received to date.	
Kriel Trust			No comment received to date.	
Willem De Jongh Trust			No comment received to date.	
Pre-identified: Local Municipality				
Ngwathe Local Municipality				
Executive Mayor (Cllr Victoria de Beer)			No comment received to date.	
Municipal Manager (NT Baleni)			No comment received to date.	
Speaker (P Ndayi)			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Ward 8 Councillor (KJ Khumalo)			No comment received to date.	
Nala Local Municipality				
Speaker of the Council (N Mashiya)			No comment received to date.	
Ward 10 (Z Moshane)			No comment received to date.	
Director corporate services			No comment received to date.	
Pre-identified: District Municipality				
Fezile Dabi District Municipality				
Executive Mayor (Cllr Dennis Khasudi)			No comment received to date.	
Municipal Manager (Thomas Siphon)			No comment received to date.	
Secretary to Municipal Manager (Rietie Grotsius)			No comment received to date.	
Environmental Services (Mcebo Mkhatshwa)			No comment received to date.	
Lejweleputswa District Municipality				
Acting Municipal Manager (Motlatsi Lesley Makhetha)			No comment received to date.	
Lejweleputswa District Municipality			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Pre-identified: Provincial Environmental Authority				
Free State Department of Agriculture and Rural Development				
Director (Zimasa Mbewu)			No comment received to date.	
Free State Department of Agriculture, Rural Development, Land and Environmental Affairs				
Deputy District Director: Fezile Dabi (Napo Thejane)			No comment received to date.	
Pre-identified: Organ of State				
Free State Department of Mineral Resources				
Regional Manager: Mineral Regulation (Kalipa Kewuti)			No comment received to date.	
Mine Environmental Management: Free State Region (Nkateko Mhlarhi)			No comment received to date.	
Free State Department of Co-operative Governance and Traditional Affairs				
Head of Department (Mokete Victor Duma)			No comment received to date.	
Free State Department of Human Settlements				
Head of Department (Nthimotse Mokhesi)			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
Free State Department of Public Works				
Member of Executive Council (Sam Mashinini)			No comment received to date.	
Free State Tourism Authority				
Acting Chief Executive Officer (L Kalane)			No comment received to date.	
Free State Department of Water and Sanitation				
Boitumelo Melato			No comment received to date.	
Willem Grobler			No comment received to date.	
National Department of Mineral Resources				
Jacob Mbele			No comment received to date.	
National Department of Agriculture, Forestry and Fisheries				
Lufuno Sithomola			No comment received to date.	
Francina Mokoma	E-mail	24 June 2024	Good day Kindly send us copy of title deed for the above mentioned farm.	
Francina Mokoma	E-mail	26 June 2024	Good day Kindly send us power of attorneys, title	Dear Francina, Thank you very much for your correspondence.

I&AP	Method	Date comments received	Comment received	Response issued
			deed and locality map, in order for the department to process the application	<p>May you kindly advise which property you are referring to as the application area occupies 63 different properties.</p> <p>Thank you and we are looking forward to the feedback.</p>
The Council for Scientific and Industrial Research (CSIR)				
Harrison Pienaar			No comment received to date.	
SANRAL/ NRA				
B Mlambo			No comment received to date.	
Mpati Makoa			No comment received to date.	
National Department of Rural Development and Land Reform				
Vela Mngwengwe			No comment received to date.	
Eskom				
WS			No comment received to date.	
Annah Kawadza			No comment received to date.	
Free State Department of Economic Development, Tourism, Environmental Affairs and Small Business				
Grace Mkhosana			No comment received to date.	
Free State Department of Police, Roads and Transport				

I&AP	Method	Date comments received	Comment received	Response issued
Nthabiseng Matsoake			No comment received to date.	
Pre-identified: NGO				
South African Heritage Resources Agency (SAHRA)				
Heritage Officer (Ragna Redelstorff)			No comment received to date.	
Transnet				
Manager - Transnet Property (Eddie Seaton)			No comment received to date.	
Property Technician (Raymond Sabata Lehloma)			No comment received to date.	
Endangered Wildlife Trust				
Senior Field Officer (Bradley Gibbons)			No comment received to date.	
Senior Manager Sustainable Financing (Kish Chetty)			No comment received to date.	
Centre for Environmental Rights				
Executive Director (Wandisa Phama)			No comment received to date.	
BirdLife SA				
Terrestrial Bird Conservation			No comment received to date.	

I&AP	Method	Date comments received	Comment received	Response issued
(Hanneline Smit-Robinson)				
Kirsten Day			No comment received to date.	
Chief Executive Officer (Mark D. Anderson)			No comment received to date.	
Agri Free State				
Operations Manager (Jack Armour)			No comment received to date.	
Agri SA				
Executive Director (Johann Kotze)			No comment received to date.	
Agricultural Research Council				
Chief Executive Officer (Litha Magingxa)			No comment received to date.	
SANParks				
Chief Executive Officer (Nkabeng Mzileni)			No comment received to date.	
Federation for a Sustainable Development				
Director (Koos Pretorius)			No comment received to date.	
Pre-identified: Provincial Environmental Authority				
Free State Heritage Resources Authority				

I&AP	Method	Date comments received	Comment received	Response issued
Heritage Coordinator (Ntando Mbatha)			No comment received to date.	

5.4 ENVIRONMENTAL RISK ASSESSMENT

Section 9 of the BAR provides a detailed description of the environmental impact/risk identification and assessment (including the methodology and findings) undertaken for the proposed prospecting. This risk assessment assesses each identified environmental impact by considering the consequence of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relate this to the probability/likelihood of the impact occurring. The BAR further considers other factors, including cumulative impacts, public concern, and potential for irreplaceable loss of resources, to determine a prioritisation factor (PF) which is applied to the Environmental Risk to determine the overall significance.

Table 5 lists the environmental impacts and risks identified and assessed in the Basic Assessment, which relate to final rehabilitation, decommissioning and closure of the prospecting. The EMPR addresses the management and mitigation of environmental impacts associated with the preceding phases whilst the annual environmental rehabilitation plan (to be prepared and reviewed annually) will provide for the planning and financial provisioning for the concurrent and progressive rehabilitation and remediation activities.

The environmental risk assessment of the impacts associated with final rehabilitation, decommissioning and closure will inform the most appropriate closure strategy for the prospecting. It is expected that, in most cases, if all the management and mitigation measures identified in the Basic Assessment and EMPR are adhered to and successfully implemented, then no latent or residual environmental impacts will remain. The mitigation measures and associated action plan is detailed in Table 6.

Impacts that are classified as high risk post-mitigation will be considered as latent environmental impacts and financial provision will be provided to remediate these specific impacts. Please see Section 9 for further details.

Table 5: Impact assessment for rehabilitation, decommissioning and closure.

Activity	Potential impact	Phase	Mitigation type
Site clearance	<ul style="list-style-type: none"> Loss or destruction of natural habitats Waste generation and disposal Loss of fauna/flora species Interference with existing land uses Fugitive dust generation New access roads 	<ul style="list-style-type: none"> Construction Operation 	Control through implementation of EMPR mitigation measures
Establishment of drill pads and access	<ul style="list-style-type: none"> Loss or destruction of natural habitats Waste generation and pollution Loss of fauna/flora species Dust generation Safety and security risks to landowners and lawful occupiers Interference with existing land uses 	<ul style="list-style-type: none"> Construction Operation 	Control through implementation of EMPR mitigation measures
Storage of construction vehicles	<ul style="list-style-type: none"> Pollution of surface and groundwater resources from potential hydrocarbon spills Compaction of soils 	<ul style="list-style-type: none"> Construction Operation 	Control through implementation of EMPR mitigation measures
Transportation to and from drill sites	<ul style="list-style-type: none"> Soil compaction Disturbance and loss of fauna and flora Fugitive Dust emissions from increased traffic Damage road infrastructure 	<ul style="list-style-type: none"> Construction Operation 	Control through implementation of EMPR mitigation measures
Storage of hazardous substances	<ul style="list-style-type: none"> Potential hydrocarbon spills that could pollute surface and groundwater resources 	<ul style="list-style-type: none"> Construction Operation 	Control through implementation of EMPR mitigation measures
Waste management	<ul style="list-style-type: none"> Pollution of habitats and surrounding areas 	<ul style="list-style-type: none"> Construction Operation 	Control through implementation of EMPR mitigation measures
Diamond core drilling	<ul style="list-style-type: none"> Vegetation clearance Removal of topsoil Soil contamination Land use conflict Dust generation Disturbance of wildlife and communities in close vicinity New access roads Increased transportation Damage to local infrastructure Safety and security risks to landowners and lawful 	<ul style="list-style-type: none"> Operation 	Control through implementation of EMPR mitigation measures

Activity	Potential impact	Phase	Mitigation type
	<ul style="list-style-type: none"> occupiers Waste water discharge Spillage and leaks of hydrocarbons Pollution or interplay between groundwater aquifers Waste generation and disposal 		
Drillhole casing	<ul style="list-style-type: none"> Pollution of groundwater resources Potential pollution of habitats with cement residue that may be exposed to runoff 	<ul style="list-style-type: none"> Decommissioning 	Control through implementation of EMPR mitigation measures
Removal of surface infrastructure	<ul style="list-style-type: none"> Soil compaction Pollution of habitats 	<ul style="list-style-type: none"> Decommissioning 	Control through implementation of EMPR mitigation measures
Rehabilitation of drillhole sites	<ul style="list-style-type: none"> Soil instability Soil pollution/compaction Pollution of surface water resources Groundwater pollution from hydrocarbon spills General environmental pollution Damage to existing infrastructure Fugitive dust emissions Noise 	<ul style="list-style-type: none"> Rehabilitation 	Control through implementation of rehabilitation actions
Monitoring of rehabilitated sites	<ul style="list-style-type: none"> Soil compaction Soil and water contamination Erosion Disturbance to communities in close vicinity Waste generation and disposal 	<ul style="list-style-type: none"> Post-Operation 	Control through adhering to monitoring requirements

It is important to note that the environmental risk assessment will be revised and updated on an annual basis to ensure that this FRDCP remains applicable to the actual and predicted environmental impacts and risks.

Table 6: Mitigation and Action Plan

Activities	Phase	Mitigation measures	Time period for implementation
Site clearance	<ul style="list-style-type: none"> Construction 	<ul style="list-style-type: none"> Demarcation of sensitive areas Minimise removal of vegetation Relocation of protected species Minimise dust generation Limit vehicle access Implement alien vegetation management 	<ul style="list-style-type: none"> Throughout construction phase
Establishment of site infrastructure	<ul style="list-style-type: none"> Construction 	<ul style="list-style-type: none"> Minimise physical footprint of construction Minimise vegetation clearance Minimise dust generation Use existing access roads 	<ul style="list-style-type: none"> Throughout construction phase
Storage of construction vehicles	<ul style="list-style-type: none"> Construction Operation 	<ul style="list-style-type: none"> Place watertight drip trays under prospecting machinery Regular cleaning of drip trays Avoid soil compaction and restrict heavy machinery to application area only 	<ul style="list-style-type: none"> Throughout construction and operation
Storage of hazardous substances	<ul style="list-style-type: none"> Construction Operation 	<ul style="list-style-type: none"> Store and dispose of hazardous substances to prevent pollution Confinements of hazardous substances 	<ul style="list-style-type: none"> Throughout construction and operation
Waste management	<ul style="list-style-type: none"> Construction Operation 	<ul style="list-style-type: none"> Control waste disposal Establish waste storage areas 	<ul style="list-style-type: none"> Throughout construction and operation
Diamond core drilling and sealing	<ul style="list-style-type: none"> Operation 	<ul style="list-style-type: none"> Comply to conditions of the EMPR Undertake investigation into any existing water users within the area to ensure no adverse impacts are expected Notify residents of potentially noisy activities Restrict noisy activities to times where potential for noise nuisance is reduced Dust suppression methods must be applied Clean-up spills of hydrocarbons or fluids immediately Pre- and post- water quality testing with a 5 km radius of drill sites Stripping of soils and stockpiled outside affected areas Placement of liners over drill pads On-site vehicles must be limited to approved access routes Compliance to industry standards, requirements and specifications in terms of (i) drillhole construction (ii) casing (iii) cement requirements and (iv) comprehensive tests 	<ul style="list-style-type: none"> Throughout operation
Refuelling	<ul style="list-style-type: none"> Construction Operation 	<ul style="list-style-type: none"> Refuelling may only take place within demarcated areas Placement of watertight drip trays in relevant locations (inlets, outlets, 	<ul style="list-style-type: none"> Throughout construction and operation

Activities	Phase	Mitigation measures	Time period for implementation
		<ul style="list-style-type: none"> points of leakage, etc.) Immediate clean-up of hydrocarbon spills 	
Maintenance and Repair	<ul style="list-style-type: none"> Construction Operation 	<ul style="list-style-type: none"> Accidental hydrocarbon spillages must be reported immediately, cleaned up and disposed of at a suitably licensed waste disposal facility 	<ul style="list-style-type: none"> Throughout construction and operation
Removal of surface infrastructure	<ul style="list-style-type: none"> Decommissioning 	<ul style="list-style-type: none"> Removal of all infrastructure from site Avoid compaction of soils Restrict heavy machinery to demarcated sites 	<ul style="list-style-type: none"> Decommissioning
Removal of waste	<ul style="list-style-type: none"> Decommissioning 	<ul style="list-style-type: none"> Waste material or chemicals, including drilling muds etc. must be removed from the site and must preferably be recycled 	<ul style="list-style-type: none"> Decommissioning
Rehabilitation	<ul style="list-style-type: none"> Rehabilitation 	<ul style="list-style-type: none"> Implement restoration and rehabilitation of disturbed areas Restoration of disturbed areas to the original condition with vegetation cover Removal and disposal of debris and contaminated soils Reform contours and natural surrounding Restore natural drainage patterns Removal of all surface infrastructure Rehabilitation of temporary access routes/roads Sites monitor by the ECO for adequate rehabilitation until the desired rehabilitation objectives have been achieved 	<ul style="list-style-type: none"> Rehabilitation
Monitoring	<ul style="list-style-type: none"> Rehabilitation 	<ul style="list-style-type: none"> Implementation of rehabilitation monitoring and management period Ground and surface water (including water sample analysis) Re-vegetation of disturbed areas where required 	<ul style="list-style-type: none"> Rehabilitation

5.5 ENVIRONMENTAL INDICATORS AND MONITORING

Table 7 provides a list of the identified environmental impacts identified for the rehabilitation, decommissioning and closure of the Prospecting. In addition, environmental indicators are identified for each impact, together with proposed monitoring requirements. The indicators and monitoring will aim to inform on-going rehabilitation and remediation activities. These indicators will also inform the assessment of whether the closure objectives have been adequately met.

Table 7: Environmental indicators and monitoring requirements.

Prospecting activity	Impacts	Functional requirements for monitoring	Indicators	Closure targets
Site clearance	<ul style="list-style-type: none"> Loss/destruction of natural habitat 	<ul style="list-style-type: none"> Monitor the rehabilitation progress with regards to flora 	<ul style="list-style-type: none"> Vegetation cover 	<ul style="list-style-type: none"> Consistent with surrounding vegetative cover
	<ul style="list-style-type: none"> Fauna direct and indirect mortality 	<ul style="list-style-type: none"> Monitor the rehabilitation progress with regards to flora and assessments for any negative impacts on fauna must be undertaken 	<ul style="list-style-type: none"> Physical evidence of mortality Vegetation cover 	<ul style="list-style-type: none"> No mortalities Consistent with surrounding vegetative cover
	<ul style="list-style-type: none"> Introduction/invasion by alien species 	<ul style="list-style-type: none"> Monitor the rehabilitation progress with regards to flora 	<ul style="list-style-type: none"> Presence of indicator species 	<ul style="list-style-type: none"> Consistent with surrounding vegetative cover
Borehole closure	<ul style="list-style-type: none"> Water (surface and ground) contamination Soil pollution 	<ul style="list-style-type: none"> All prospecting drillholes should be plugged and sealed with cement 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: <ul style="list-style-type: none"> 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 All excess aggregate shall also be removed 	<ul style="list-style-type: none"> Plugged boreholes sealed with cement No visible remains of concrete on the ground 	<ul style="list-style-type: none"> Consistent with surrounding vegetative cover
Removal of surface infrastructure	<ul style="list-style-type: none"> Soil compaction Erosion 	<ul style="list-style-type: none"> All infrastructure, equipment and other items used during prospecting will be removed from the site Compaction of soil must be avoided as far as possible. The use of heavy machinery must be restricted in areas outside of the proposed prospecting 	<ul style="list-style-type: none"> Vegetation cover 	<ul style="list-style-type: none"> Consistent with surrounding vegetative cover

Prospecting activity	Impacts	Functional requirements for monitoring	Indicators	Closure targets
Removal of waste (General and hazardous waste)	<ul style="list-style-type: none"> Waste pollution 	sites to reduce the compaction of soils <ul style="list-style-type: none"> Regular monitoring of waste management as well as waste disposal records (monthly ECO reports) during rehabilitation. This must additionally form part of the annual Environmental Audit 	<ul style="list-style-type: none"> Physical evidence of waste. 	<ul style="list-style-type: none"> No waste on site

5.6 CLOSURE VISION, OBJECTIVE AND TARGETS

The vision, and consequent objective and targets for rehabilitation, decommissioning and closure, aim to reflect the local environmental and socio-economic context of the project, and to represent both the corporate requirements and the stakeholder expectations.

The receiving environment within which the prospecting activities will be undertaken includes the following key land-uses:

1. Cultivated commercial fields
2. Wetlands
3. Low shrub land

Stakeholders will be consulted during the public participation process for the BAR and their comments relating to closure, decommissioning and rehabilitation will be considered in terms of this document. With reference to both the environmental context of the project and the feedback from the consultation process the vision for closure is to ensure that the post closure land use aligns with the surrounding land-use and does not affect the sustained utilisation of the land. In practice the post closure land-use will depend on the pre-prospecting land-use applicable to the specific location of the invasive prospecting activities. This FRDCP aims to address the key closure objectives which are likely to remain consistent for the majority of the prospecting activities.

Driven by the closure vision and with due consideration of the project context, the following closure objectives are presented:

1. Set the course for eventual ecosystem restoration, including the restoration of the natural vegetation community, hydrology, and wildlife habitats
2. Prevent future environmental issues related to lateral movement through the borehole
3. Protection of water resources
4. Ensure that land is usable, in alignment with surrounding land-uses

5.7 ALTERNATIVE CLOSURE AND POST CLOSURE OPTIONS

There are various alternative closure and post closure options available. The identification and consideration of the most suitable alternatives are driven by, inter alia the following considerations:

1. The ability of the selected alternative to adequately meet the specified closure vision and objectives
2. The efficiency, viability, and practicality of the selected alternative
3. The alignment with the local environmental and socio-economic context and associated opportunities and constraints

Table 8 presents some available options and alternatives related to the process of abandoning and closure of a prospecting site. This reassessment must be utilised to select the most appropriate and responsible closure option. The options in the table below that are marked with an "X" are considered the preferred options.

Table 8: Closure alternatives.

Prospecting Activity	Aspect	Options	Comment
Prospecting boreholes	Plugging	Yes	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.
		No	The option of not plugging the borehole, but sealing with cement.
	Plugging extent	Complete	Regulations 132(3) of the MPRDA Regulations requires that the wellbore (borehole) be cemented for the full length and diameter of the borehole to surface.
		Partial/ intermittent	Due to the cost of complete cementing, there may be instances where intermittent casing could be used. This is dependent on the nature of the borehole and the geological strata.
	Surface Infrastructure	Complete removal	Regulation 132 (3) of the MPRDA Regulations requires that the surface area of a decommissioning well must be clear of obstructions and equipment. In order to allow unhindered land use of the well area, it is suggested that all surface infrastructure be removed.
		Retain	Surface infrastructure would typically include the borehole, cap, flange, and /or collar. Surface infrastructure would typically remain for possible future use by the landowner or the applicant.
	Access roads	Rehabilitate	The intention is to rehabilitate the area, including the access route, to the pre-prospecting condition.
		Retain	In certain instances, the landowner may request the retention of the access route.

The annual review of this FRDCP must where applicable include an assessment and adjustment of the closure strategy to reflect the most recent technical development and industry best practice, as well as any lessons learnt from the implementation of closure on this project.

5.8 MOTIVATION FOR PREFERRED CLOSURE OPTION

The preferred closure option is as follows:

- 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
- In order to allow unhindered land-use of the prospecting area, it is suggested that all surface infrastructure be removed
- Rehabilitate access routes

It is anticipated that the closure option presented above, together with monitoring over a one (1) year post closure period, will achieve the stipulated closure objective. This closure option is in line with industry best practice and the requirements of the MPRDA Regulations.

5.9 CLOSURE PERIOD AND POST CLOSURE REQUIREMENTS

The closure period is defined as the period between the cessation of prospecting activities, and the completion of active rehabilitation actions on the applicable site. It is important to note that the nature of prospecting drilling is such that closure may be implemented for individual boreholes as and when the analysis ends.

Following successful completion of the active closure actions it is suggested that a further post closure period be assigned to allow for monitoring of the success of closure. It is anticipated that a period of one (1) year be permitted for on-going post closure monitoring. This post closure monitoring will include the following:

- Inspection of borehole plug integrity
- Vegetation composition

5.10 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations apply to this FRDCP:

1. The following assumptions have been made and used as the basis for the financial provision calculations:
 - Six diamond drillholes will be drilled covering an area of 5 400 m² combined
 - An area of approximately 0.54 ha will be cleared for the establishment of a drill pad
 - Any access road prepared for the prospecting activities will be rehabilitated during closure
 - The closure actions and associated period will commence as soon as a borehole is abandoned
 - It is assumed that the entire length and diameter of the prospecting borehole will be plugged/cemented in the event that ground water intersects the borehole
 - Post closure land-use to resemble the pre-prospecting land-use and vegetative cover
2. It is assumed that the management and mitigation measures suggested in the BAR relating to ongoing environmental management will be complied with. This includes post drilling clean-up and rehabilitation
3. It is assumed that the drilling will be carried out in accordance with industry best practice

5.11 FINAL POST PROSPECTING LAND-USE

As discussed above the final post closure land-use will depend on the specific site circumstances. For the purposes of this FRDCP it is assumed that the post closure land use will be natural grassland utilised for cattle grazing and arable land.

5.12 CLOSURE ACTIONS

5.12.1 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. 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 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:

1. Maintain and minimise impacts to the ecosystem within the application area
2. Re-establishment of the pre-developed land capability to allow for a suitable post-prospecting land use
3. Prevent soil, surface water and groundwater contamination
4. Comply with the relevant local and national regulatory requirements
5. 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 an application for Environmental Authorisation must be submitted for closure in accordance with Activity 22 Listing Notice 1:

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 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.

5.12.2 Phase 1: Making Safe

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:

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

5.12.3 Phase 2: Landform Design, Erosion Control and Re-vegetation

Landform, erosion control and re-vegetation are important parts 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. 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:

1. Shape, level and de-compact (where necessary) the final landscape after removing all the project infrastructure, dress with topsoil and, where necessary, vegetate with indigenous species
2. Remove access roads 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
3. Shape all channels and drains to smooth slopes and integrate into the natural drainage pattern
4. Construct contour banks and energy dissipating structures as necessary to protect disturbed areas from erosion prior to stabilisation

5. Promote re-vegetation through the encouragement of the natural process of secondary succession
6. Natural re-vegetation is dependent on de-compaction of subsoils and adequate replacement of the accumulated reserves of topsoil (for example, over the borehole sites), so as to encourage the establishment of pioneer vegetation
7. Remove alien and/or exotic vegetation

5.12.4 Phase 3: Monitoring and Maintenance

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:

1. Biodiversity monitoring
2. 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.

5.12.5 Post-Closure Monitoring and Maintenance

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. The programme is to include proposed monitoring during and after the closure of the prospecting borehole sites and related activities.

It is recommended that the post-closure monitoring include the following:

1. 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
2. Confirmation that all de-contaminated sites are free of residual pollution after decommissioning
3. 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
4. Confirmation that the prospecting sites are safe and are not resulting in a pollution hazard
5. Annual environmental reports will be submitted to the Designated 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
6. 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

5.13 FINAL REHABILITATION, DECOMMISSIONING AND CLOSURE SCHEDULE

Table 9 presents the forecast schedule of actions related to the final rehabilitation, decommissioning and closure, in relation to the overall forecast prospecting schedule. It should be noted that this schedule represents cautious approach and therefore doesn't take into consideration the recommendation that final rehabilitation, decommissioning and closure may be initiated earlier in the prospecting process for individual prospecting sites.

Table 9: Timeframes for each of the proposed activities.

Name of activity	Year 1	Year 2	Year 3	Year 4	Year 5
Desktop studies and acquisition of historical data					
Data inventory and capturing					
Data synthesis and database creation					
Generation of geological models					
Location of key historical borehole core (if available)					
Re-logging and re-sampling of historical boreholes					
Drilling					
Resource estimation					

5.14 ORGANISATIONAL CAPACITY

Capacity of the following key roles and responsibilities must be provided for:

- **The Applicant:** The applicant is ultimately responsible for ensuring compliance with all the provisions of the Prospecting Right and associated plans, as well as other relevant legal requirements. The Applicant must ensure knowledge and understanding of the applicable legislation, guidelines and industry best practices. Where necessary the Applicant must appoint suitably qualified specialists, engineers, and other internal and external resources to adequately comply with the applicable commitments and requirements. Relevant commitments made and obligations contained within the legal requirements must be adequately planned and budgeted for. The Applicant must also ensure that suitable structures are put in place to effectively communicate with the affected landowners and relevant stakeholders.
- **Independent Environmental Assessment Practitioner:** This individual will be appointed to ensure compliance with the requirements of the FRDCP and specifically to undertake the following tasks:
 - Undertake the required pre-closure environmental site assessment, risk assessment, and landowner consultations
 - Prepare a site specific final closure and decommissioning plan
 - Undertake the required periodic compliance monitoring and reporting during the closure period
- **Prospecting specialist:** This individual must be a suitably qualified professional who must have relevant experience in prospecting. Key attributes must include experience and qualifications related to the technologies applicable to prospecting site closure, as well as a thorough understanding of internationally accepted closure standards and guidelines. This specialist will be responsible for ensuring that the closure plan is implemented to ensure that the risks to the environment and surrounding communities are prevented or limited.

Further education, training and capacity building is critical to ensure that the prospecting activities align with evolving internally accepted best practice and research. In this regard the Applicant must ensure that regular review of international best practice is undertaken and where applicable implemented throughout the prospecting programme.

5.15 IDENTIFICATION OF CLOSURE PLAN GAPS

The key gaps applicable to this closure plan are as follows:

- The impact that any existing boreholes may have on the receiving environment is unknown

The following actions have been proposed to address these gaps:

- A site specific closure and decommissioning plan will be prepared for each invasive activity and will where applicable, be informed by a specialist environmental site assessment, and risk assessment, as well as a specialist assessment and plan for borehole plugging and decommissioning

Furthermore, the Financial Provisioning Regulations requires that the FRDCP be revisited, assessed, and revised on an annual basis. This annual review must aim to ensure that the gaps identified above are addressed, as applicable, and the relevant financial provisioning updated.

5.16 RELINQUISHMENT CRITERIA

Relinquishment can be defined as the formal approval by the relevant regulating authority indicating that the completion criteria for the prospecting activity have been met to the satisfaction of the authority. In this regard the relinquishment criteria are driven by the objectives of closure and consequently the indicators applicable to each impact associated with the closure and decommissioning of the prospecting. The proposed relinquishment criteria include:

1. **Biodiversity and soils:** The vegetation cover of the affected areas must be consistent with surrounding vegetative cover. There must be ecosystem functionality which is consistent with the surroundings. There must be no faunal mortalities associated with the prospecting
2. **Social:** There must be no unattended complaints. Where possible written confirmation from the affected landowner must be solicited confirming that outstanding issues have been addressed and closed out
3. **Waste:** There must be no waste materials remaining on site

5.17 CLOSURE COST

At any time funds must be available for the amount of 10 years of the calculation of the sum of the rehabilitation calculation. The remainder of this section provides details on the proposed closure cost. The assumptions and limitations stated in Sections 5.9 and 5.16.3 also underpin the basis of this closure cost determination.

5.17.1 Closure Cost Methodology

The closure cost has been calculated through the following steps:

1. Applicable prospecting activities are listed
2. Applicable closure actions listed for each activity
3. Cost items are listed for each action
4. Cost units and rates determined for each item (where possible on the basis of actual quotations)
5. Total cost is calculated

5.17.2 Closure Cost Estimation

This closure cost is based on 2024 rates and will require annual reassessment, revision and escalation. Table 10 provides the detailed breakdown of the anticipated closure cost for 6 boreholes.

Table 10: Closure cost estimation.

Description		Sum of cost
Phase 1: Closure and rehabilitation		
Sealing and capping of 6 (six) drillholes	R	1 800.00
Earthworks (backfilling, reshaping and topsoil replacements)	R	66 000.00
Removal and disposal of waste	R	36 000.00
Re-vegetation (apply fertiliser and seeds)	R	10 800.00
Phase 2: Monitoring, Maintenance and Relinquishment		
2 to 3 years of maintenance and aftercare	R	6 807.22
Sub Total (1)	R	121 407.22
1. Preliminary and General (12%)	R	14 568.87
2. Contingency (10%)	R	12 140.72
Sub Total (2)	R	148 116.81
3. VAT (15%)	R	22 217.52
Grand Total	R	170 334.33

5.17.3 Closure Cost Assumptions and Limitations

In accordance with the Prospecting Works Programme the following activities are included, and their associated cost assumptions:

1. The following assumptions have been made and used as the basis for the financial provision calculations:
 - Six diamond core boreholes will be drilled covering an area of 5 400 m² combined
 - An area of approximately 0.54 ha will be cleared for the establishment of a drill pad
 - Any access road prepared for the prospecting activities will be rehabilitated during closure
 - The access road prepared for the prospecting activities will be rehabilitated during closure
 - The closure actions and associated period will commence as soon as a borehole is abandoned
 - It is assumed that the entire length and diameter of the prospecting borehole will be plugged/cemented in the event that ground water intersects the borehole
 - Post closure land-use to resemble the pre-prospecting land-use and vegetative cover

5.18 MONITORING, AUDITING AND REPORTING

The requirement to monitor and audit should be carried through all phases of the proposed prospecting. In this regard the following monitoring and auditing requirements for the pre-closure phases have been specified in the BAR and EMPR (please refer to the BAR and EMPR for further detail):

1. Compliance monitoring and auditing:

- In accordance with Regulation 26 of the NEMA 2014 EIA Regulations the Competent Authority will indicate the extent and frequency of required environmental audits in any consequent Environmental Authorisations. For the purposes of this submission the following is proposed:
 - o The Site Manager (normally the Project Geologist): will be responsible for daily monitoring, culminating in weekly reports which will be filed in support of an overall monthly report, which is to be submitted to the Environmental Officer
 - o Compliance with the BAR & EMPR will be audited quarterly by the Environmental Officer. The officer will be responsible for quarterly site inspections and reports, culminating in the compilation of the annual audit assessment report which is to be submitted to the DMR, as per legal requirement. The results of these inspections will be documented and kept on record for the life of the prospecting operation.
- 2. Environmental Monitoring (as detailed in the BAR and EMPR):
 - Waste management
 - Progressive rehabilitation
- 3. Review and update of Final Rehabilitation, Decommissioning and Closure Plan:
 - In accordance with Regulation 11 of the NEMA Financial Provisioning Regulations, the Applicant must ensure annual review of the annual rehabilitation plan, the final rehabilitation decommissioning and closure plan, as well as the environmental risk assessment. This annual review must be audited by an independent auditor.

It is critical to continue monitoring through to the post- closure phase of the prospecting. The aim of this being to ensure that the objectives of the rehabilitation and closure plan are met. In this regard the following actions, to be adjusted based on the completion of the pre-closure site assessment, are proposed:

1. Compliance monitoring and auditing: Annual (or as agreed) environmental reports will be submitted to the Competent authority and other relevant stakeholders for at least one year post-decommissioning. 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 free condition.
2. Environmental Monitoring:
 - Flora: Biodiversity assessments mid wet season should be undertaken by the ECO to monitor the rehabilitation progress with regards to flora. 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.

6 ANNUAL REHABILITATION PLAN

The annual rehabilitation plan aims to:

1. review concurrent rehabilitation and remediation activities already implemented
2. establish rehabilitation and remediation goals and outcomes for the forthcoming 12 months, which contribute to the gradual achievement of the post-mining land use, closure vision and objectives identified in the holder's final rehabilitation, decommissioning and mine closure plan
3. establish a plan, schedule and budget for rehabilitation for the forthcoming 12 months
4. identify and address shortcomings experienced in the preceding 12 months of rehabilitation

5. evaluate and update the cost of rehabilitation for the 12 month period and for closure, for purposes of supplementing the financial provision guarantee or other financial provision instrument

The proposed prospecting schedule (Table 3) indicates that no invasive work will be commenced within the first 36 months. Activities during the first, second and third year include desktop studies and acquisition of historical data, data inventory and capturing, data synthesis and database creation, generation of geological models, location of key historical boreholes (if available) and re-logging and re-sampling of historical boreholes. As such, no rehabilitation or remediation will be planned for this period and consequently no financial provision can be calculated at present.

Within the fourth and fifth years of the Prospecting Work Programme, drilling is planned. The nature of drilling is such that closure may be implemented for individual sites as and when the analysis is complete, or alternatively at the end of the prospecting programme. It is therefore anticipated that the annual review of the annual rehabilitation plan, as required under Section 11 of the NEMA GNR 1147, will consider the more detailed prospecting programme at that time and provide for, schedule and budget for rehabilitation for the forthcoming 12 month period.

7 ENVIRONMENTAL RISK ASSESSMENT – LATENT AND RESIDUAL ENVIRONMENTAL IMPACTS

According to the Financial Provisioning Regulations (2015) the objective of the environmental risk assessment report that relates to latent and residual impacts is to:

1. ensure timeous risk reduction through appropriate interventions
2. identify and quantify the potential latent environmental risks related to post closure
3. detail the approach to managing the risks
4. quantify the potential liabilities associated with the management of the risks
5. outline monitoring, auditing and reporting requirements

This section of the report aims to address these objectives separately in cases where they have not been considered in previous sections.

7.1 THE ASSESSMENT PROCESS USED AND DESCRIPTION OF LATENT ENVIRONMENTAL RISK

Section 9 of the BAR provides a detailed description of the environmental impact/risk identification and assessment (including the methodology and findings) undertaken for the proposed prospecting. Further details of the risk assessment methodology are detailed in the Environmental Risk Assessment of this report. As mentioned, the BAR and EMPR have identified mitigation measures which, once implemented successfully, will result in the avoidance or acceptable reduction of the associated impact.

The drivers that could result in the manifestation of the latent risk are largely defined by the specifics of the site location and the geological profile surrounding each specific site. It is suggested that further investigations are conducted during annual revisions to provide more clarity. These investigations must include regular revision of the environmental risk assessment and consequently inform the responsible management of latent and residual impacts.

7.2 MANAGEMENT ACTIVITIES, COSTING AND MONITORING REQUIREMENTS

New international best practice guidelines that may be developed in the future will be considered in all annual updates of the financial provisions and changes to the risk assessment will be reported on. In addition, monitoring results and auditing reports as described above for one year after closure will inform the revised risk assessment further.

8 REFERENCES

1. Constitution of the Republic of South Africa (1996) Republic of South Africa, 216pp
2. Department of Mineral Resources (2002) Minerals and Petroleum Resources Development Act (Act 28 of 2002). Cape Town, 62pp
3. Department of Environmental Affairs (1998) National Environmental Assessment Management Act (Act 107 of 1998). Cape Town, 96pp
4. Department of Environmental Affairs (2017) National Environmental Management Act, 1998 (Act 107 of 1998) - Amendments to the Environmental Impact Assessment Regulations, 2014. South Africa, 66pp
5. Department of Environmental Affairs (2015) Financial Provisioning Regulations. Pretoria, 47pp
6. Greyling, T. (1999) Towards Managing Environmental Disputes: Appropriate Public Participation. Prepared for Conference on Environmental Dispute Resolution 10-11 June 1998, Fourways, Gauteng, Manyaka Greyling Meiring (Pty) Ltd, South Africa, 21pp
7. Shango Solutions (2024) Final Basic Report and Environmental Management Programme Report for New Kroonstad North, 166pp
8. Shango Solutions (2024) Comments and Responses Report for New Kroonstad North, 30pp