



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

NAME OF APPLICANT: K2015268783 (South Africa) (Pty) Ltd

TEL NO: 082 071 7571

FAX NO: 021 882 9891

POSTAL ADDRESS: PO Box 6038, Uniedal, 7612

PHYSICAL ADDRESS: Brandtwacht Manor House, Ben du Toit Avenue, Stellenbosch, 7000

FILE REFERENCE NUMBER SAMRAD: NW 30/5/1/1/3/2/1 (12380) EM

1. IMPORTANT NOTICE

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

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

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

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

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

2. OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

- a) Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative content;
- b) Identify the alternatives considered, including the activity, location and technology alternatives;
- c) Describe the need and desirability of the proposed alternatives;
- d) Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
 - a) The nature, significance, consequence, extent, duration and probability of the impacts occurring to; and
 - b) The degree to which these impacts –
 - (aa) Can be reversed;
 - (bb) May cause irreplaceable loss of resources; and
 - (cc) Can be managed, avoided or mitigated;
- e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to -
 - a) Identify and motivate a preferred site, activity and technology alternative;
 - b) Identify suitable measures to manage, avoid or mitigate identified impacts; and
 - c) Identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i. Details of the EAP

Name of the Company: EOH Coastal & Environmental Services
Name of the Practitioner: Dr Chantel Bezuidenhout
Tel No: 041 585 1715
Fax No: 086 604 8781
Postal address: 13 Stanley Street, Richmond Hill, Port Elizabeth, 6001
E-mail address: c.bezuidenhout@cesnet.co.za / chantel.bezuidenhout@eoh.co.za

ii. Expertise of the EAP

(1) The qualifications of the EAP

(with evidence).

- B.Sc degree (Botany, Geography)
- B.Sc Honours (Botany)
- MSc (Botany)
- PhD (Botany)

Copies of degrees can be viewed in Appendix 1.

(2) Summary of the EAP's past experience.

(In carrying out the Environmental Impact Assessment Procedure)

Dr Chantel Bezuidenhout holds MSc and PhD degrees in Botany (estuarine ecology) and a BSc degree in Botany and Geography from NMMU. Chantel has been an Environmental Consultant for approximately 11 years and as such has been focused on environmental management and impact assessment. Chantel is well versed in environmental legislation and has managed a number of environmental impact assessments and management plans for heavy mineral mining in South African and Madagascar, as well as a number of EIAs for open case mines (copper, nickel, graphite) in Zambia and Mozambique. These projects have been completed to international standards (IFC and World Bank), and have been granted authorisation by their host countries. Chantel is also well versed in stakeholder engagement and stakeholder processes, all EIAs that has been managed by Chantel has included community consultations and as such Chantel has been used for various forms of community engagement in rural African settings. Chantel has also been extensively involved in the data collection and report writing for land and natural resource use assessments in both Madagascar and Mozambique. The data gathering component involves expensive community meetings in order to establish land use (including agriculture) and natural resource use within the communities and wider regions. Chantel has recently completed an extensive land survey as part of a Resettlement process for a heavy minerals mine in Mozambique as well as in-kind compensation surveys in Tanzania. She is currently a principal consultant and Branch Manager of the Port Elizabeth Office of EOH CES.

More details on project specific experience can viewed in Chantel's CV included in Appendix

1.

b) Location of the overall Activity.

Farm Name:	The Farm De Paarl 246 KP, The Farm Goedgedacht 255 KP, The Farm Bedford 254 KP and the Farm Syferbult 257 KP, Magisterial District of Bojanala, North West Province
Application area (Ha)	Approximate extent of all properties: 10,036 hectares (ha) Approximate extent of the drill pads, drill holes, trenches and the site camp: 1.65 ha
Magisterial district:	Magisterial District of Bojanala, North West Province
Distance and direction from nearest town	68 km southwest of the town of Thabazimbi
21 digit Surveyor General Code for each farm portion	<ul style="list-style-type: none">• TOKP0000000002460000• TOKP0000000002550000• TOKP0000000002540000• TOKP0000000002570000

c) Locality Map

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

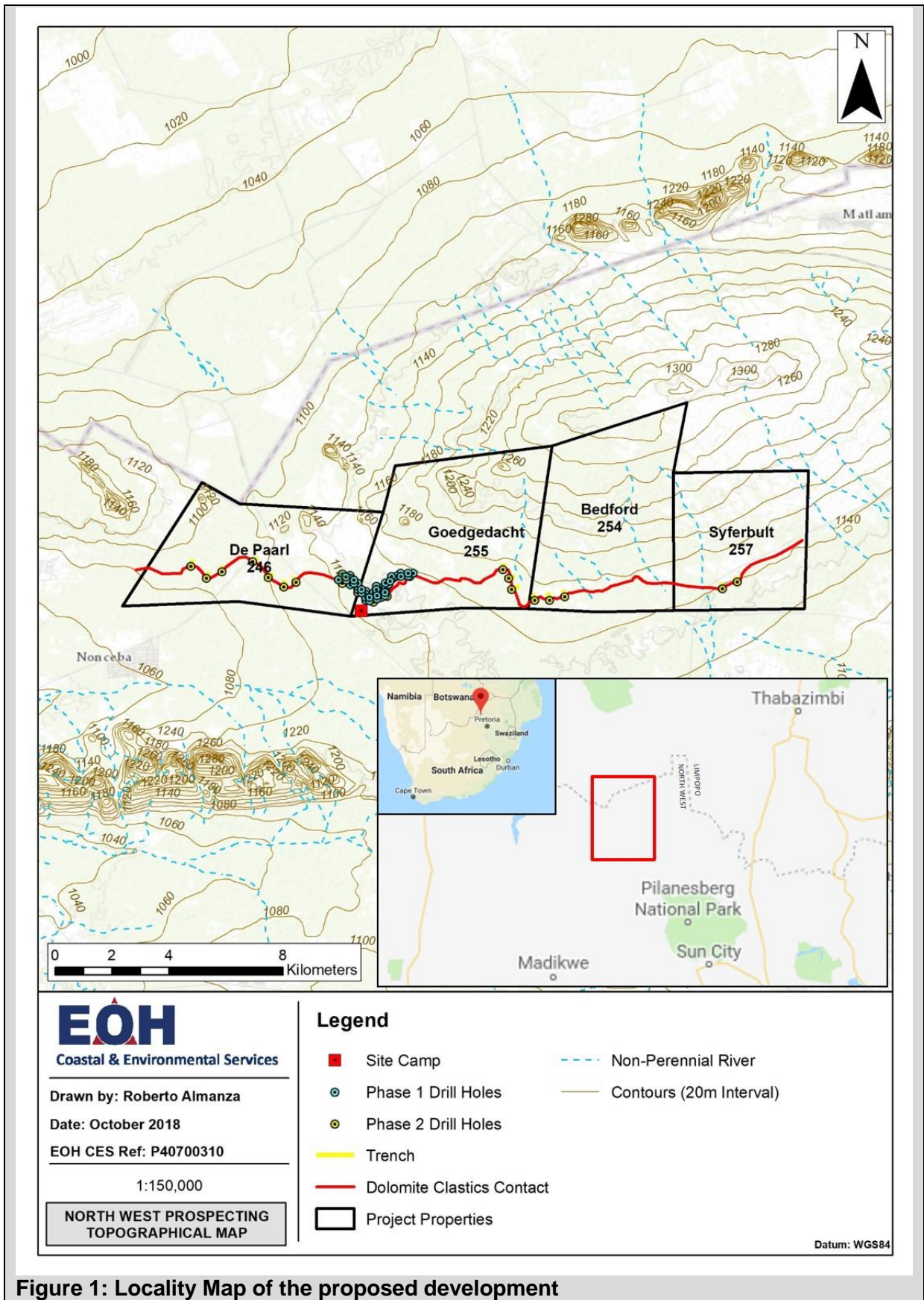


Figure 1: Locality Map of the proposed development

d) Description of the scope of the proposed overall activity.

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

The proponent intends to prospect mineral commodities such as copper, lead, zinc, nickel and cobalt (base metals) and, gold and silver (precious metals), over four (4) portions of land in the Magisterial District of Bojanala, North West Province. The proposed site is approximately 10,036 ha in extent (of which only 1.65 ha is anticipated to be disturbed for the placement of drill pads, drill holes, trenches and the site camp) and situated 68 km southwest of the town of Thabazimbi.

The project will entail a one (1) year non-invasive geophysical survey period (Phase 1) and a four (4) year invasive drilling period (Phase 2 and 3). Phase 2 (24 months) will consist of approximately 20 drill holes approximately 200 m deep, soil geochemical survey (approximately 5,000 samples) and trenching (approximately 4,000 m). Phase 3 (24 months) will consist of approximately 50 drill holes 200 m deep. The authorisation will be required for the duration of the prospecting right which is an initial 5 years plus a potential to extend the right by an addition to this of 3 years. Thus a total of 8 years.

For drilling, reverse circulation and diamond core drilling methods will be used. Drilling rigs are mounted on a 4x4 truck or trailer. The hole diameter for reverse circulation holes are typically 80-123 mm and for diamond core 50-80 mm. The mineralisation is present from surface and will be targeted up to a depth of approximately 200 m. Drill hole sites will be GPS located and pegged. Drill sites are inspected and photographed prior to any disturbance. After each drill hole is completed, logged and sampled, the borehole collar will be surveyed by an independent surveyor using a high accuracy differential GPS. Thereafter the drill sumps will be filled in, the drill area rehabilitated and photographed according to the procedures stipulated in the Environmental Management Plan.

The boreholes will be logged and mineralised horizons sampled by qualified geologists. Samples will be submitted for analyses to determine the metal content. Each sample will be logged, halved, bagged and numbered at a central core yard by the geologist and field assistants. The bagged samples will then be dispatched to the contracted laboratory. The remaining core and other half sample will be stored for future test work. Analysis to determine the metal content (gold, silver, copper, lead, zinc, nickel and cobalt) is conducted off site at an accredited independent laboratory.

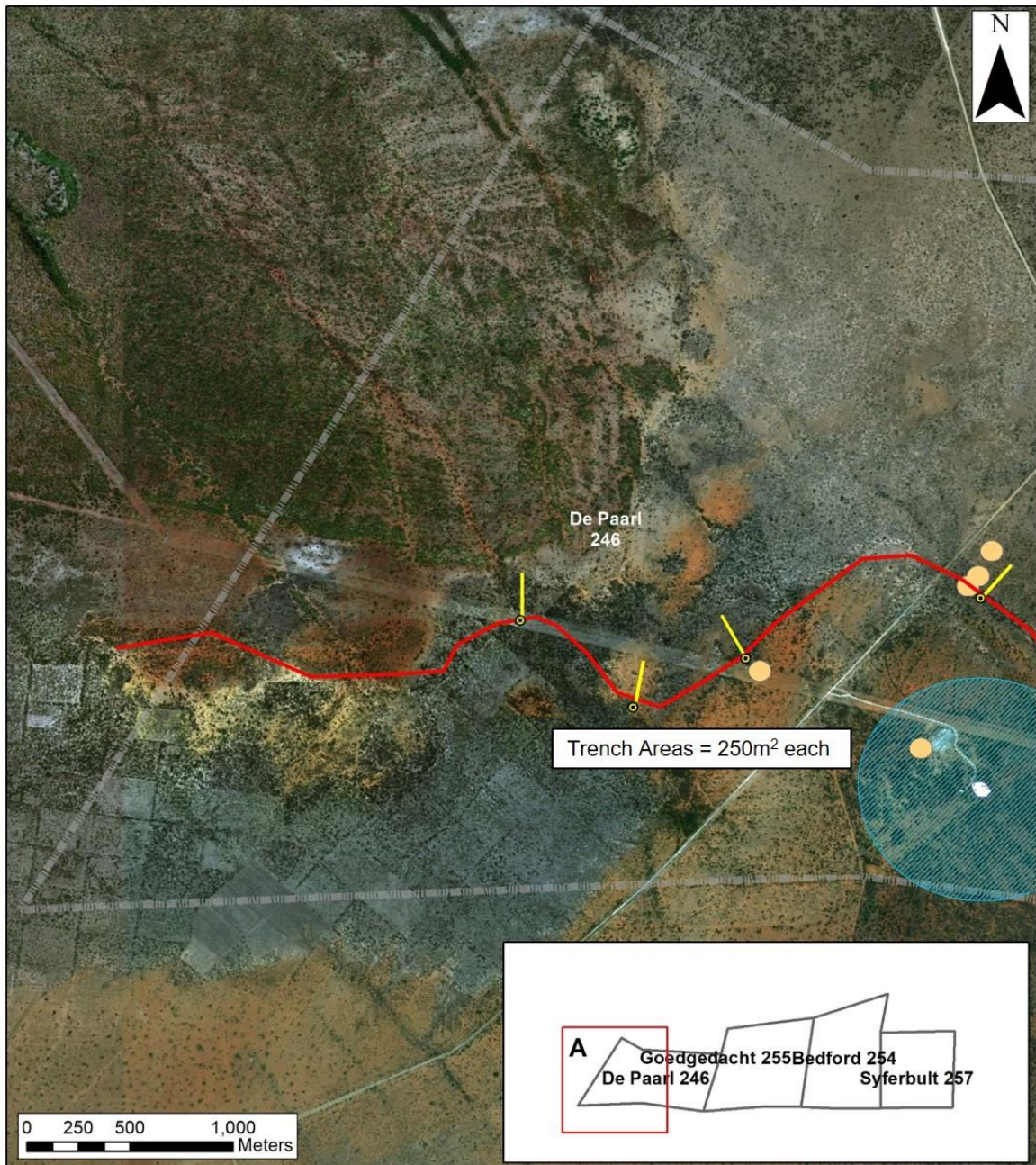
In terms of trenching, an excavator or similar equipment will be used at regular intervals and perpendicular to geophysical and geochemical anomalies. Trenches will typically be 1 m wide and from a few centimetres deep (where hard rock is near the surface) to 0.5 m deep. The edges of the trenches will be geologically mapped and channel samples collected for laboratory analysis. Trenches will be GPS located and pegged. Rehabilitation of the trenches will be undertaken as soon as practical following surface disturbance. The soil and rock is returned to the hole (backfilled) before the topsoil is replaced. The surface is left slightly mounded to allow for subsidence. Trenches will be inspected and photographed prior to and after excavation.

Soil samples are collected on a rectangular pattern, generally with closer spacing of sample sites (20-100 m apart) along more widely spaced sample lines (200-500 m apart). The sampling lines are oriented normal, or at a high angle, to the expected longer dimension of the target. Samples are obtained by digging a small hole with a long-handled pick, usually down to the "B" horizon, typically between 20 and 30 cm below surface. A 300-500 g sample is collected and placed in chemical-free paper (geochemical) bags suitable for air drying or drying in an oven. The sample hole is backfilled immediately after collection of the sample. Samples are submitted to an off-site laboratory for preparation (including sieving) and analyses.

It should be noted that no new access roads will be required. A camp site of approximately 100 m x 100 m (1 ha) will be established at a suitable location on site.

Additional information (if required) on the project description can be obtained from the prospecting works programme.

As the entire development cannot be depicted as a whole on a single map at a scale of 1:10,000 a series of six (6) images depicting the entire development are included below (Figure 2A-F).



EOH

Coastal & Environmental Services

Drawn by: Roberto Almanza

Date: October 2018

EOH CES Ref: P40700310

1:25,000

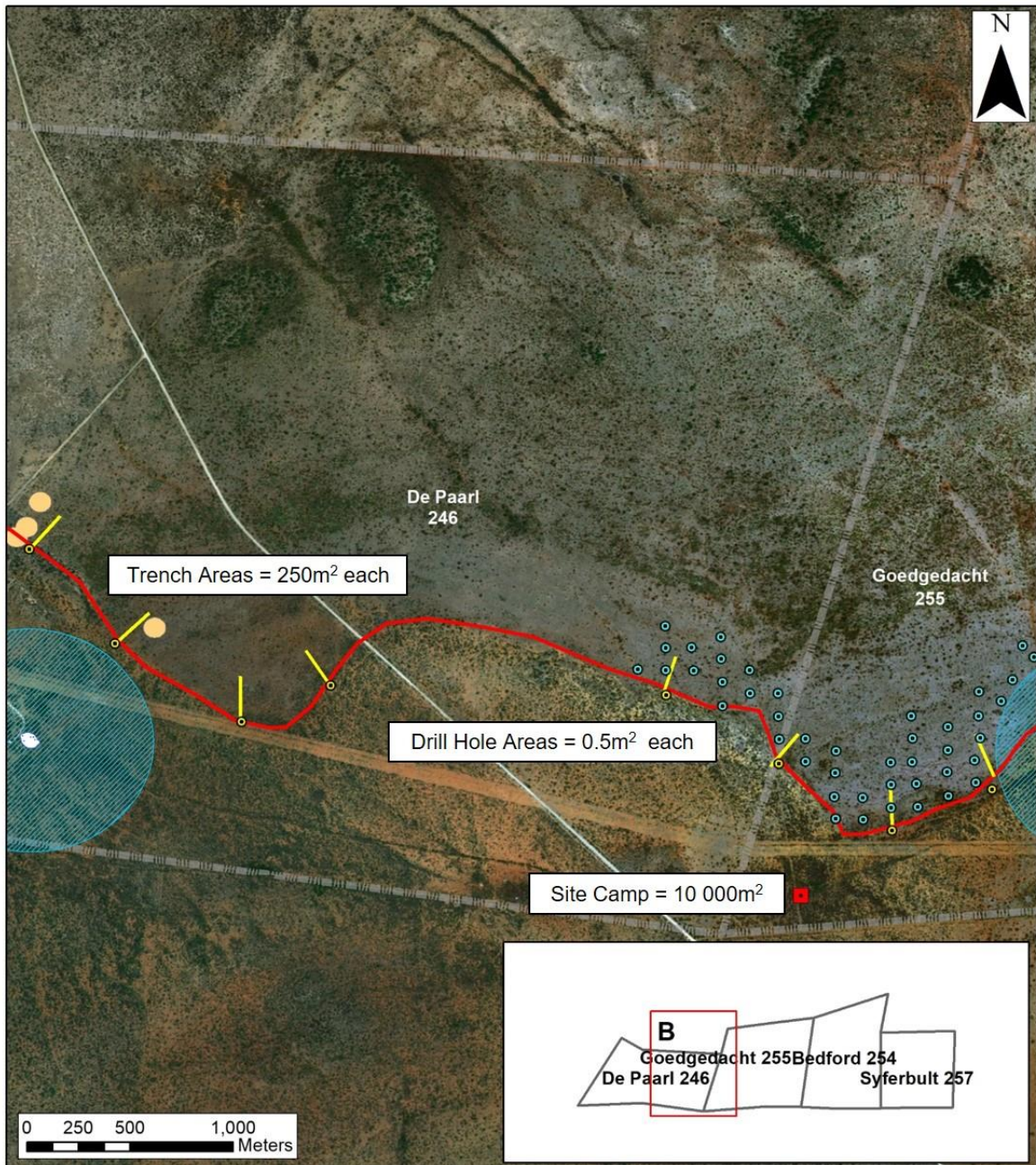
NORTH WEST PROSPECTING
PROJECT PLAN (A)

Legend

- Site Camp
- Phase 1 Drill Holes
- Phase 2 Drill Holes
- Trench
- Dolomite Clastics Contact
- Heritage Site 50m Buffer
- NW Prospecting NFEPA Wetlands
- NW Prospecting NFEPA Wetlands 500m Buffer
- Project Properties

Datum: WGS84

Figure 2A: Project Layout



EOH

Coastal & Environmental Services

Drawn by: Roberto Almanza

Date: October 2018

EOH CES Ref: P40700310

1:25,000

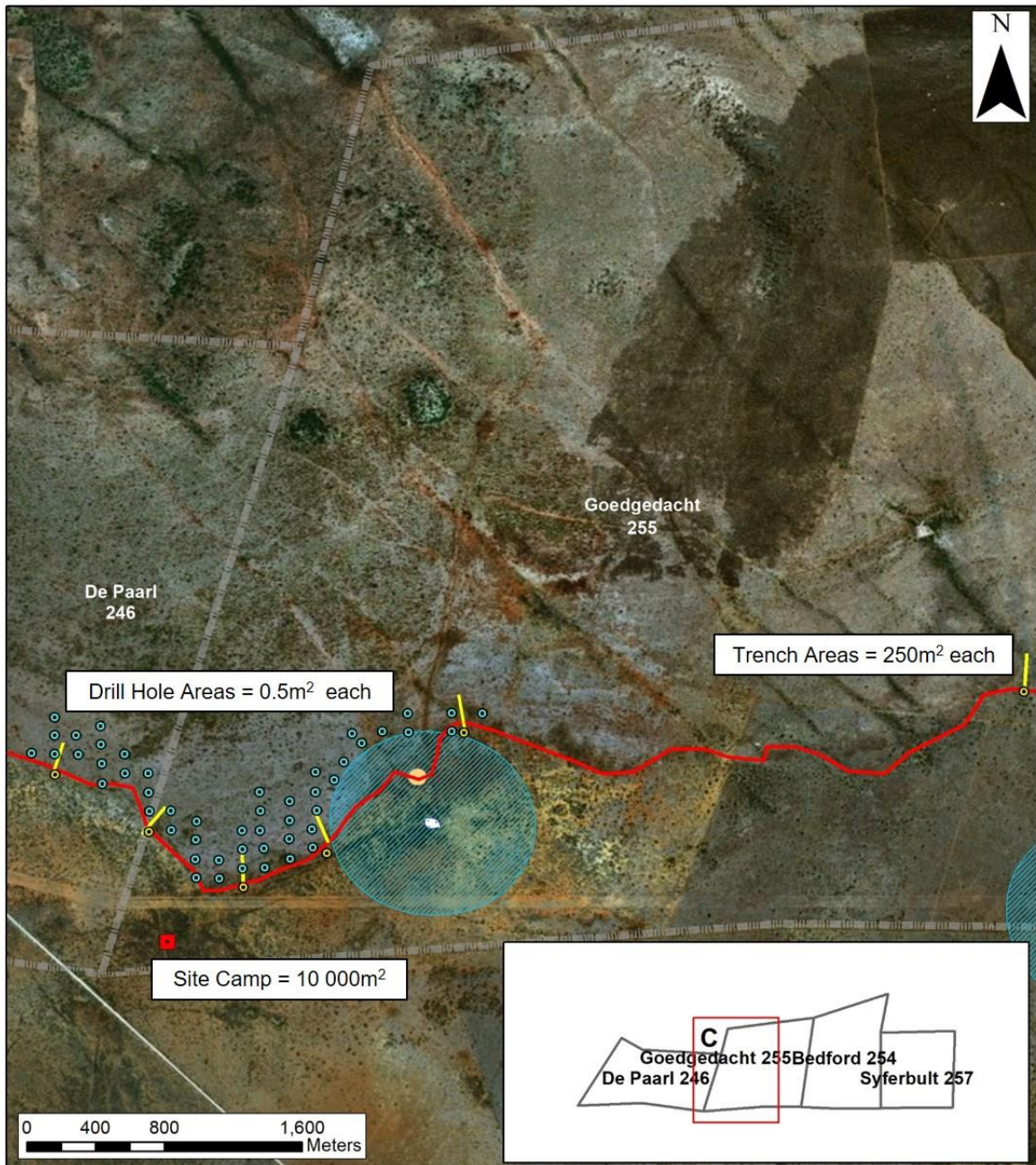
**NORTH WEST PROSPECTING
PROJECT PLAN (B)**

Legend

- Site Camp
- Phase 1 Drill Holes
- Phase 2 Drill Holes
- Trench
- Dolomite Clastics Contact
- Heritage Site 50m Buffer
- ▨ NW Prospecting NFEPA Wetlands
- ▨ NW Prospecting NFEPA Wetlands 500m Buffer
- Project Properties

Datum: WGS84

Figure 2B: Project Layout



EOH

Coastal & Environmental Services

Drawn by: Roberto Almanza

Date: October 2018

EOH CES Ref: P40700310

1:30,000

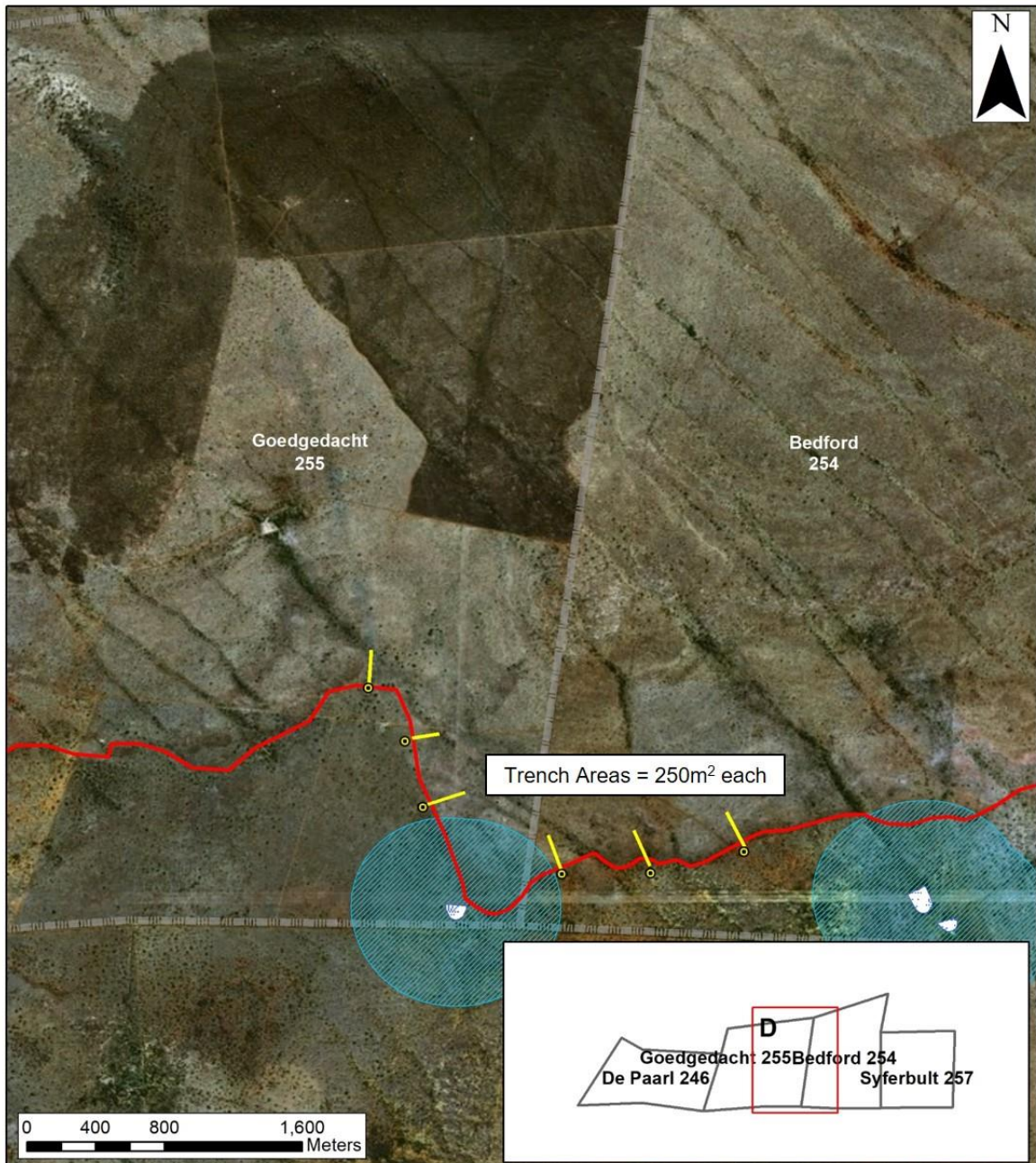
**NORTH WEST PROSPECTING
PROJECT PLAN (C)**

Legend

- Site Camp
- Phase 1 Drill Holes
- Phase 2 Drill Holes
- Trench
- Dolomite Clastics Contact
- Heritage Site 50m Buffer
- NW Prospecting NFEPA Wetlands
- NW Prospecting NFEPA Wetlands 500m Buffer
- Project Properties

Datum: WGS84

Figure 2C: Project Layout



EOH

Coastal & Environmental Services

Drawn by: Roberto Almanza

Date: October 2018

EOH CES Ref: P40700310

1:30,000

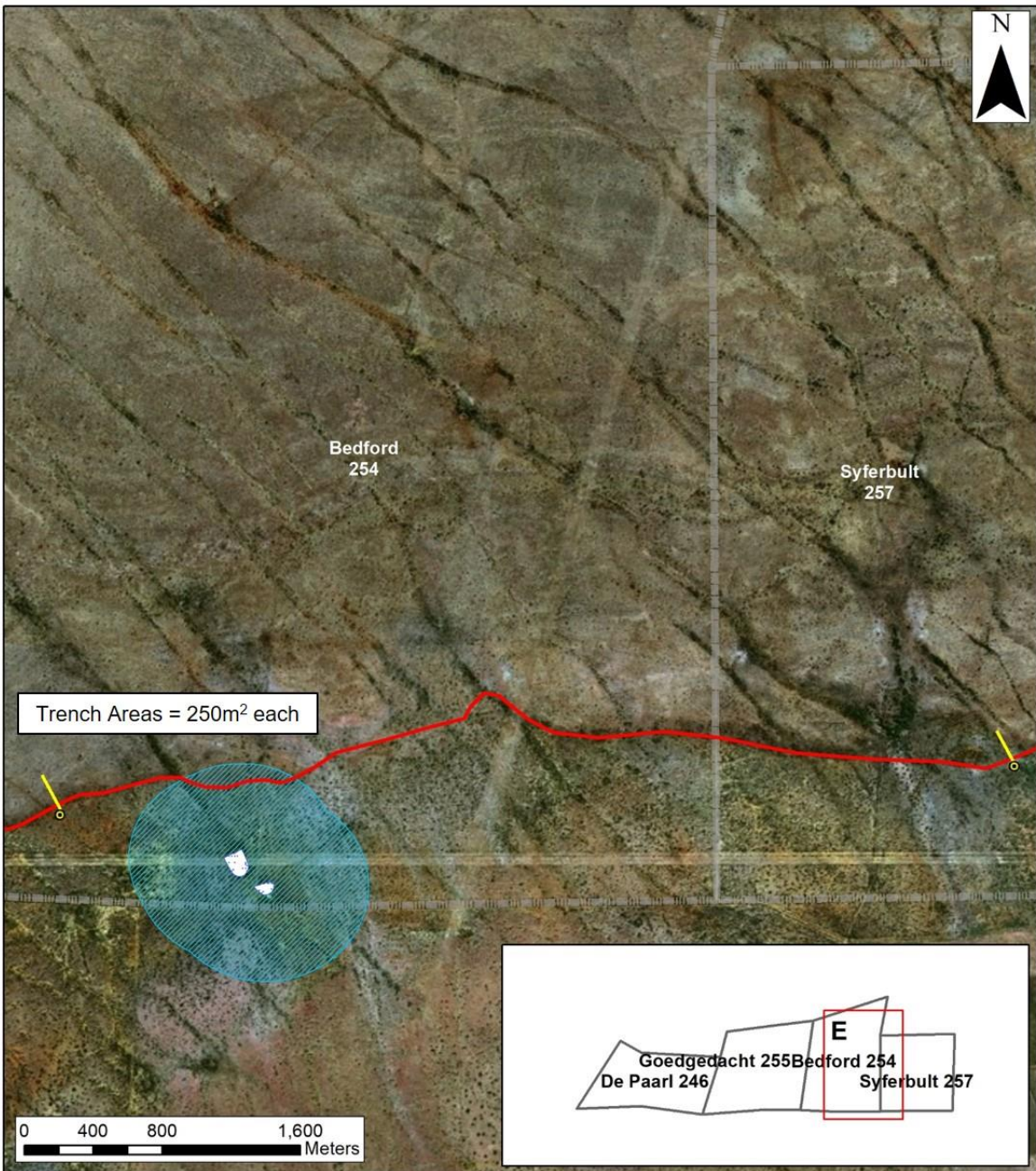
**NORTH WEST PROSPECTING
PROJECT PLAN (D)**

Legend

- Site Camp
- Phase 1 Drill Holes
- Phase 2 Drill Holes
- Trench
- Dolomite Clastics Contact
- Heritage Site 50m Buffer
- NW Prospecting NFEPA Wetlands
- NW Prospecting NFEPA Wetlands 500m Buffer
- Project Properties

Datum: WGS84

Figure 2D: Project Layout



EOH

Coastal & Environmental Services

Drawn by: Roberto Almanza

Date: October 2018

EOH CES Ref: P40700310

1:30,000

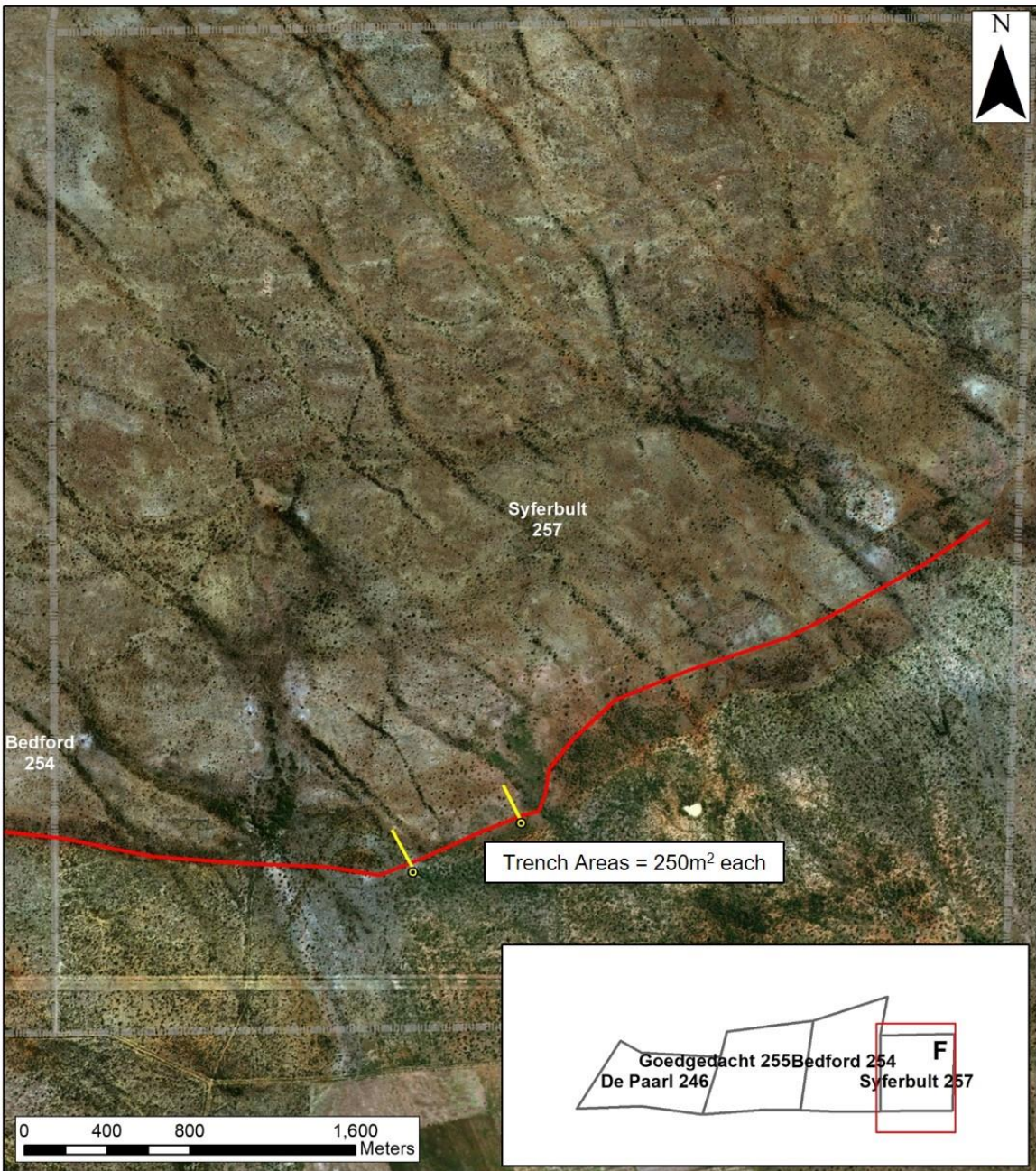
**NORTH WEST PROSPECTING
PROJECT PLAN (E)**

Legend

- Site Camp
- Phase 1 Drill Holes
- Phase 2 Drill Holes
- Trench
- Dolomite Clastics Contact
- Heritage Site 50m Buffer
- NW Prospecting NFEPA Wetlands
- NW Prospecting NFEPA Wetlands 500m Buffer
- Project Properties

Datum: WGS84

Figure 2E: Project Layout



EOH

Coastal & Environmental Services

Drawn by: Roberto Almanza

Date: October 2018

EOH CES Ref: P40700310

1:25,000

**NORTH WEST PROSPECTING
PROJECT PLAN (F)**

Legend

- Site Camp
- Phase 1 Drill Holes
- Phase 2 Drill Holes
- Trench
- Dolomite Clastics Contact
- Heritage Site 50m Buffer
- NW Prospecting NFEPA Wetlands
- NW Prospecting NFEPA Wetlands 500m Buffer
- Project Properties

Datum: WGS84

Figure 2F: Project Layout

i. Listed and specified activities

Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002 as amended in 2013) requires, upon request by the Minister that an Environmental Management Plan be submitted and that the applicant must notify and consult with Interested and Affected Parties (I&APs). Section 24 of the NEMA requires that activities, which may impact on the environment, must obtain an Environmental Authorisation (EA) from the relevant authority before commencing with the activities. These activities are listed under the 2014 EIA Regulations (and subsequent amendments dated 7 April 2017). Listed activities relating to prospecting are found in Government Notice (GNR.) 327 and GNR. 324, as outlined below:

<p align="center">NAME OF ACTIVITY</p> <p>(E.g. For prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc ... etc... etc</p> <p>E.g. For mining – excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc... etc... etc)</p>	<p align="center">Aerial extent of the activity Ha or m²</p>	<p align="center">LISTED ACTIVITY Mark with an X where applicable or affected</p>	<p align="center">APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)</p>
<p>Phase 1 – Non-Invasive geophysical survey</p> <p>Phase 2 – Invasive prospecting activities</p> <ul style="list-style-type: none"> • 20 drill holes approximately 200 m deep • Soil geochemical survey (5,000 samples) • 4,000 m of trenching <p>Phase 3 – Invasive prospecting activities</p> <ul style="list-style-type: none"> • 50 drill holes approximately 200 m deep 	<ul style="list-style-type: none"> • Drill Pads and Drill Holes – 0.45 ha • Trenching – 0.2 ha <p>Cumulative extent of 0.65 ha</p>	<p align="center">X</p>	<p>Listing Notice 1 (GNR.983) of the 2014 EIA Regulations (and amended April 2017) (GNR. 982)</p> <p>Activity 20: Any activity including the operation of that activity which requires a prospecting right in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including -</p> <p>(a) Associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource; or</p> <p>(b) The primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing, but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource, in which case activity 6 in Listing Notice 2 applies. i.e. Drill pads, drill holes and trenches</p>
<p>Phase 1 – Non-Invasive geophysical survey (including establishment of the site camp)</p> <p>Phase 2 – Invasive prospecting activities (as listed above)</p> <p>Phase 3 – Invasive prospecting activities (as listed above)</p>	<p>Drill Pads and Drill Holes – 0.45 ha</p> <p>Trenching – 0.2 ha</p> <p>Camp site – 1 ha</p> <p>Cumulative extent of 1.65 ha</p>	<p align="center">X</p>	<p>Listing Notice 1 (GNR.983) of the 2014 EIA Regulations (and amended April 2017) (GNR. 982)</p> <p>GNR. 983, Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation. i.e. Drill pads, drill holes, trenches and the site camp (cumulative extent)</p>

<p>Phase 1 – Non-Invasive geophysical survey (including establishment of the site camp)</p> <p>Phase 2 – Invasive prospecting activities (as listed above)</p> <p>Phase 3 – Invasive prospecting activities (as listed above)</p>	<p>Drill Pads and Drill Holes – 0.45 ha</p> <p>Trenching – 0.2 ha</p> <p>Camp site – 1 ha</p> <p>Cumulative extent of 1.65 ha</p>	<p>X</p>	<p>Listing Notice 3 (GNR.985) of the 2014 EIA Regulations (and amended April 2017) (GNR. 982)</p> <p>GNR. 985, Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>(h) In North West:</p> <ul style="list-style-type: none"> i. World Heritage Sites; core of biosphere reserve; or sites or areas identified in terms of an international convention; ii. A protected area including municipal or provincial nature reserves as contemplated by NEMPAA or other legislation; iii. All Heritage Sites proclaimed in terms of National Heritage Resources Act, 1999 (Act No. 25 of 1999); iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority; v. Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or vi. Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland. <p>i.e. All areas where vegetation would need to be cleared in a CBA, this will include 8 drill holes and 8 trenches in Phase 1 and 5 drill holes in Phase 2.</p>
---	---	----------	--

<p>Closure</p>	<p>Drill Pads and Drill Holes – 0.45 ha Trenching – 0.2 ha Camp site – 1 ha Cumulative extent of 1.65 ha</p>	<p>X</p>	<p>Listing Notice 1 (GNR.983) of the 2014 EIA Regulations (and amended April 2017) (GNR. 982) Activity 22: The decommissioning of any activity requiring – (i) A closure certificate in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002). (ii) A prospecting right, mining right, mining permit, production right or exploration permit; 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.</p> <p>but excluding the decommissioning of an activity relating to the secondary processing of a – (a) Mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource; or (b) Petroleum resource, including the refining of gas, beneficiation, oil or petroleum products; – in which case activity 31 in this Notice applies.</p> <p>i.e. Closure will be required once prospecting and rehabilitation is complete.</p>
----------------	--	----------	--

ii. Description of the activities to be undertaken

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

The proponent intends to prospect mineral commodities such as copper, lead, zinc, nickel and cobalt (base metals) and, gold and silver (precious metals), over four (4) portions of land in the Magisterial District of Bojanala, North West Province. The proposed site is approximately 10,036 ha in extent (of which only 1.65 ha is anticipated to be disturbed for the placement of drill pads, drill holes, trenches and the site camp) and situated 68 km southwest of the town of Thabazimbi.

The project will entail a one (1) year non-invasive geophysical survey period (Phase 1) and a four (4) year invasive drilling period (Phase 2 and 3). Phase 2 (24 months) will consist of approximately 20 drill holes approximately 200 m deep, soil geochemical survey

(approximately 5,000 samples) and trenching (approximately 4,000 m). Phase 3 (24 months) will consist of approximately 50 drill holes 200 m deep.

For drilling, reverse circulation and diamond core drilling methods will be used. Drilling rigs are mounted on a 4x4 truck or trailer. The hole diameter for reverse circulation holes are typically 80-123 mm and for diamond core 50-80 mm. The mineralisation is present from surface and will be targeted up to a depth of approximately 200 m. Drill hole sites will be GPS located and pegged. Drill sites are inspected and photographed prior to any disturbance. After each drill hole is complete, logged and sampled, the borehole collar will be surveyed by an independent surveyor using a high accuracy differential GPS. Thereafter the drill sumps will be filled in, the drill area rehabilitated and photographed according to the procedures stipulated in the Environmental Management Plan.

The boreholes will be logged and mineralised horizons sampled by qualified geologists. Samples will be submitted for analyses to determine the metal content. Each sample will be logged, halved, bagged and numbered at a central core yard by the geologist and field assistants. The bagged samples will then be dispatched to the contracted laboratory. The remaining core and other half sample will be stored for future test work. Analysis to determine the metal content (gold, silver, copper, lead, zinc, nickel and cobalt) is conducted off site at an accredited independent laboratory.

In terms of trenching, an excavator or similar equipment will be used at regular intervals and perpendicular to geophysical and geochemical anomalies. Trenches will typically be 1 m wide and from a few centimetres deep (where hard rock is near the surface) to 0.5 m deep. The edges of the trenches will be geologically mapped and channel samples collected for laboratory analysis. Trenches will be GPS located and pegged. Rehabilitation of the trenches will be undertaken as soon as practical following surface disturbance. The soil and rock is returned to the hole (backfilled) before the topsoil is replaced. The surface is left slightly mounded to allow for subsidence. Trenches will be inspected and photographed prior to and after excavation.

Soil samples are collected on a rectangular pattern, generally with closer spacing of sample sites (20-100 m apart) along more widely spaced sample lines (200-500 m apart). The sampling lines are oriented normal, or at a high angle, to the expected longer dimension of the target. Samples are obtained by digging a small hole with a long-handled pick, usually down to the "B" horizon, typically between 20 and 30 cm below surface. A 300-500 g sample is collected and placed in chemical-free paper (geochemical) bags suitable for air drying or drying in an oven. The sample hole is backfilled immediately after collection of the sample. Samples are submitted to an off-site laboratory for preparation (including sieving) and analyses.

It should be noted that no new access roads will be required. A camp site of approximately 100 m x 100 m (1 ha) will be established at a suitable location on site.

Additional information (if required) on the project description can be obtained from the prospecting works programme.

The Prospecting Work Programme (PWP) will thus be implemented in three (3) phases:

1. The Construction phase

The Construction Phase will pertain to the establishment of a site camp approximately 1 ha in extent.

2. The Prospecting (Operational) phase

This phase is relevant to drilling and trenching activities as stipulated in the Prospecting Work Programme (PWP). All activities will be done in accordance with industry best practice and in

compliance with the Mine Health and Safety Act (Act 29 of 1996, as amended in 2006) and as outlined in the Section above.

3. The Decommissioning/Rehabilitation phase

The decommissioning phase involve rehabilitation of the area to the state in which it was prior to prospecting and disturbance. All the stockpiled soil will be backfilled into the sumps, drill holes and trenches and all equipment will be removed from the site. Rehabilitation measures are described in more detail in Part B of this report.

e) Policy and Legislative Context

<p>APPLICABLE LEGISLATION AND GUIDELINES TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)</p>	<p>REFERENCE WHERE APPLIED</p>	<p>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LIGISLATION AND POLICY CONTEXT (e.g. In terms of the National Water Act a Water Use Licence has / has not been applied for)</p>
<p>Constitution of the Republic of South Africa (108 of 1966). The Constitution of the Republic of South Africa is the supreme law of the land. As a result, all laws, must conform to the Constitution. The Bill of Rights - Chapter 2 of the Constitution, includes an environmental right (Section 24) according to which, everyone has the right:</p> <p>a) <i>To an environment that is not harmful to their health or well-being; and</i> b) <i>To have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that:</i></p> <p>i. <i>Prevent pollution and ecological degradation;</i> ii. <i>Promote conservation; and</i> iii. <i>Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</i></p>	<p>Chapter 2 of the Constitution includes an environmental right (Section 24).</p> <p>Obligation to ensure that the proposed development will not result in pollution and ecological degradation; and</p> <p>Obligation to ensure that the proposed development is ecologically sustainable, while demonstrating economic and social development.</p>	<p>No Authorisation required but links with NEMA.</p>

<p>National Environmental Management Act, (Act 107 of 1998); with subsequent amendments; and Environmental Impact Assessment Regulations 2014 (and as amended 07 April 2017). Relevant Sections of the Act: Section 2, 23, 24, 28-33</p> <ul style="list-style-type: none"> • Application of the NEMA principles (e.g. need to avoid or minimise impacts, use of the precautionary principle, polluter pays principle, etc.) • Application of fair decision-making and conflict management procedures are provided for in NEMA. • Application of the principles of Integrated Environmental Management and the consideration, investigation and assessment of the potential impact of existing and planned activities on the environment; socio-economic conditions; and the cultural heritage. <p>NEMA introduces the duty of care concept, which is based on the policy of strict liability. This duty of care extends to the prevention, control and rehabilitation of significant pollution and environmental degradation. It also dictates a duty of care to address emergency incidents of pollution. A failure to perform this duty of care may lead to criminal prosecution, and may lead to the prosecution of managers or directors of companies for the conduct of the legal persons.</p> <p>In addition NEMA introduced a framework for environmental impact assessments that aim to avoid detrimental environmental impacts through the regulation of specific activities that cannot commence without prior environmental authorisation. Authorisation either requires a Basic Assessment or a Full Scoping and Environmental Impact Assessment, depending on the type of activity. These assessments specify mitigation and management guidelines to minimise negative environmental impacts and optimise positive impacts.</p>	<p>In terms of Section 28, every person who causes; has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent pollution or rectify the damage caused.</p> <p>The developer must apply the NEMA principles, the fair decision-making and conflict management procedures that are provided for in NEMA.</p> <p>The developer must apply the principles of Integrated Environmental Management and consider, investigate and assess the potential impact of existing and planned activities on the environment, socio-economic conditions and the cultural heritage.</p> <p>Listed activities relating to prospecting are found in Government Notice (GNR.) 983 and GNR. 985, as outlined above.</p>	<p>An Environmental Authorisation has been applied for. This Basic Assessment Report (BAR) forms part of that process.</p>
<p>National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); and Alien Invasive Species Regulations, 2014. The National Environmental Management: Biodiversity Act (NEM:BA), No. 10 of 2004, aims to assist with the management and conservation of South Africa's biological diversity through the use of legislated planning tools. These planning tools include the declaration of bioregions and the associated bioregional plans as well as other mechanisms for managing and conserving biodiversity. The objectives of the Act include inter alia:</p> <ul style="list-style-type: none"> • The management and conservation of biological diversity within the Republic and of the components of such biological diversity; 	<p>The proposed development must conserve endangered ecosystems and protect and promote biodiversity.</p> <p>Activities may not be carried out in threatened or protected ecosystems without first gaining authorisation for such activities. The development site is not located within an ecosystem listed as in terms of NEMBA (refer to Figure 3 included below).</p>	<p>Should any protected species be found a safe buffer will be placed around these and these will not be disturbed. If this is not possible (i.e. if any species of conservation concern will need to be removed as a result of the project), the</p>

<ul style="list-style-type: none"> • The use of indigenous biological resources in a suitable manner; • The fair and equitable sharing of benefits arising from bio-prospecting of genetic material derived from indigenous biological resources; • To give effect to ratified international agreements relating to biodiversity which are binding on the Republic. • To provide for co-operative governance in biodiversity management and conservation; and • To provide for a South African National Biodiversity Institute to assist in achieving the objectives of the Act. <p>In addition to this, Sections 50-62 of the Act provide details relating to the protection of threatened or protected ecosystems and species, while Sections 63-77 of the Act provide details relating to alien and invasive species with the purpose of preventing their introduction and spread, managing, controlling and eradicating of alien and invasive species.</p> <p>The NEM:BA Alien and Invasive Species List (Government Notice 599 of 2014) lists Alien and Invasive species that are regulated by the NEM:BA Alien and Invasive Species Regulations (Government Notice 98 of 2014).</p>	<p>No protected species may be removed or damaged without a permit.</p> <p>An invasive species monitoring, control and eradication plan for land/activities under the control of the proponent should be developed, as part of their environmental plans in accordance with section 11 of NEMA.</p>	<p>relevant permits will be applied for.</p>
<p>National Environmental Management: Air Quality Act (Act 39 of 2004) with subsequent amendments and Regulations.</p> <p>As with the Atmospheric Pollution Prevention Act 45 of 1965, the objective of the NEM: Air Quality Act is to protect the environment by providing the necessary legislation for the prevention of air pollution. <i>“To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto.”</i></p>	<p>The “best practicable means” for the abatement of dust during prospecting if approved have to be taken.</p> <p>All appliances used for preventing or reducing to a minimum the escape into the atmosphere of noxious or offensive gases have to be properly operated and maintained and the best practice means for achieving this implemented.</p>	<p>Moving vehicles, drilling and trenching, may increase dust – With adequate mitigation measures this will not be significant. The proposed development <u>does not</u> require an Air Emissions Licence according to the NEM: Air Quality Act (Act 39 of 2004).</p> <p>No Authorisation required.</p>
<p>National Heritage Resources Act, (Act 25 of 1999).</p> <p>The protection of archaeological and paleontological resources is the responsibility of a provincial heritage resources authority and all archaeological objects, paleontological material and meteorites are the property of the State. <i>“Any person who discovers archaeological or paleontological objects or material or a meteorite in the course of development must immediately report the find to</i></p>	<p>No person may alter or demolish any structure or part of a structure, which is older than 60 years or disturb any archaeological or paleontological site or grave older than 60 years without a permit issued by the relevant provincial heritage resources authority.</p>	<p>The extent of the footprint area (1.65 ha), triggers Section 38 of the National Heritage Resources Act (25 of 1999), which means that a Heritage Impact</p>

<p><i>the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority”.</i></p>	<p>No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter or deface archaeological or historically significant sites.</p>	<p>Assessment (HIA) must be carried out prior to any prospecting activities commencing. In terms of Section 38 (1) (c) (iii), a HIA is required if the footprint area of the proposed development is more than 5,000 m² in extent.</p> <p>The HIA undertaken for the study, identified seven heritage archaeological and heritage sites. A 50 m buffer (as per the recommendation of the heritage specialist) have been placed around these, and all boreholes and trenches have been moved out of this buffer zone. Refer to Figure 6 below.</p> <p>In addition, a paleontological desktop assessment was also undertake for the proposed development.</p> <p>This Draft BAR will be uploaded to the SAHRIS portal for comment.</p>
<p>National Water Act (Act 36 of 1998) and its subsequent amendments and General Authorisation Regulations in terms of Section 39 of the National Water Act, 1998 (Act 36 of 1998) for water uses as defined in section 21(c) or section 21(i).</p>	<p>Appropriate measures must be taken to prevent the pollution of water courses and other water resources.</p> <p>Riparian zones must be protected.</p>	<p>Based on spatial tools (NFEPa) four (4) wetlands occur along the southern boundary of the prospecting right area.</p>

<p>The purpose of this Act (Section 2) is to ensure that the Nation's water resources are protected, used, developed, conserved and controlled in ways that take into account, including:</p> <ul style="list-style-type: none"> (a) Promoting sustainable use of water; (b) Protection of aquatic and associated ecosystems and their biological diversity; and (c) Reducing and preventing pollution and degradation of water resources. <p><u>Protection of Water Resources (Sections 12-20)</u> Provides details of measures intended to ensure the comprehensive protection of all water resources, including the water reserve and water quality.</p> <p>With respect to the establishment of water quality objectives, objectives may relate to (Section 13):</p> <ul style="list-style-type: none"> • The presence and concentration of particular substances in the water; • The characteristics and quality of the water resource and the in-stream and riparian habitat; • The characteristics and distribution of aquatic biota; and • The regulation and prohibition of in-stream and land-based activities which may affect the quantity and quality of the water resources. <p><u>Section 19 deals with Pollution Prevention (Part 4)</u> The person (including a municipality) who owns, controls, occupies or uses the land in question, is responsible for taking reasonable measures to prevent pollution of water resources. If such measures are not taken, the catchment management agency concerned, may itself do whatever is necessary to prevent the pollution or remedy its effects and recover all reasonable costs from the persons responsible for the pollution.</p> <p>The 'reasonable measures' which have to be taken may include measures to:</p> <ul style="list-style-type: none"> • Cease, modify or control any act or process causing the pollution; • Comply with any prescribed waste standard or management practice; • Contain or prevent the movement of pollutants; • Eliminate any source of the pollution; • Remedy the effects of the pollution; and • Remedy the effect of any disturbance to the bed and banks of a watercourse. 	<p>Construction/operations within a river, within the regulated area of a watercourse (100 m from the centre line) and within 500 m of a wetland requires a General Authorisation (GA) under section 21 (c) & (i) issued by the Department of Water and Sanitation (DWS).</p> <p>Manage the use of water as well as runoff in such a manner that it has limited pollution impacts.</p> <p>Prevent the unauthorised use of water by abstraction and in close proximity to drainage lines and waterbodies.</p> <p>Use water sparingly</p>	<p>None of the drill holes occur within the wetlands themselves, but some did occur within the 500 m regulated buffer. As such the layout has been revised and these drill holes have been moved outside of these buffer areas. There are also some non-perennial drainage lines on site (not included in NFEPA), but clearly seen on the topographical map. The closest trenches to these drainage areas are approximately 170 m away and therefore none of the drill holes and trenches occur within the 100 m regulated buffer around drainage areas.</p> <p>As such, a Water Use Authorisation (WUA) in terms of Section 21 (c) and (i) will not be required for this project.</p> <p>Approximately 5000 litres of water will be required per day. Water may be extracted from boreholes or other water resources onsite. The necessary discussion will be undertaken with DWS to determine if a WUA will be required.</p>
--	---	--

<p>With respect to pollution of rivers, the following definition is relevant when considering the potential impacts of development on water resources. Pollution may be deemed to occur when the following are affected:</p> <ul style="list-style-type: none"> • The quality, pattern, timing, water level and assurance of instream flow; • The water quality, including the physical, chemical and biological characteristics of the water; • The character and condition of the in-stream and riparian habitat; • The characteristics, condition and distribution of the aquatic biota. <p>The Act defines 'instream habitat' as including the physical structure of a watercourse and the associated vegetation in relation to the bed of the watercourse.</p> <p><u>Riparian Ecosystems</u> 'Riparian habitat' includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species and physical structure distinct from those of adjacent land areas.</p> <p><u>Section 21 deals with the Use of Water</u> Section 21 (a-k) describes activities defined as a water use under the Act. These activities may only be undertaken subject to the application for, and issue of, a water use licence.</p>		
<p>National Forest Act (Act 84 of 1998) and its subsequent amendments and 1976 List of Protected Trees (Government Gazette No. 9542 Schedule A) in the 1998 National Forest Act (NFA) as amended in December 2016.</p> <p>The NFA provides the legal framework for the protection and sustainable use of South Africa's indigenous forests. Any area that has vegetation which is characterised by a closed and contiguous canopy and under storey plant establishment is defined as a 'forest' and as a result falls under the authority of the Department of Agriculture, Forestry and Fisheries (DAFF): Forestry sector. A clause in Chapter 3, Part 1 covers:</p> <p><u>Prohibition on destruction of trees in natural forests</u> Section 7 (1) No person may cut, disturb, damage or destroy any indigenous living tree in, or remove or receive any such tree from, a natural forest except in terms of (a) a licence issued under subsection (4) or section 23.</p>	<p>No forest patches or protected trees that form part of a forest or forest association may be damaged or destroyed without a permit.</p> <p>Development that comes within 50 metres of a forest must be closely monitored.</p>	<p>Based on available literature describing the historic vegetation cover, no forest patches were identified within the development footprint.</p> <p>Should any protected trees be identified on site a safe buffer needs to be placed around them, alternatively the relevant permits will need to be applied for.</p>

<p><u>Prohibition on destruction of protected trees</u> Section 15 (1) No person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate, or in any other manner acquire or dispose of any protected tree or any product derived from a protected tree except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated.</p> <p><u>Effect of setting aside protected areas</u> Section 10 (1) No person may cut, disturb, damage or destroy any forest product in, or remove or receive any forest product from, a protected area, except—</p> <ol style="list-style-type: none"> (a) In terms of the rules made for the proper management of the area in terms of Section 11(2)(b); (b) In the course of the management of the protected area by the responsible organ of State or person; (c) In terms of a right of servitude; (d) In terms of the authority of a licence granted under section 7(4) or 23; (e) In terms of an exemption under section 7(1)(b) or 24(6); or (f) In the case of a protected area on land outside a State forest, with the consent of the registered owner or by reason of another right which allows the person concerned to do so, subject to the prohibition in section 7(1). 		
<p>National Environmental Management: Protected Areas Amendment Act (No. 31 of 2004). The purpose of this Act is to provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. The objectives of this Act are -</p> <ul style="list-style-type: none"> • To provide, within the framework of national legislation, including the National Environmental Management Act, for the declaration and management of protected areas; • To provide for co-operative governance in the declaration and management of protected areas; • To effect a national system of protected areas in South Africa as part of a strategy to manage and conserve its biodiversity; • To provide for a representative network of protected areas on state land, private land and communal land; 	<p>Development within protected areas or within close proximity to protected areas require Authorisation.</p>	<p>The proposed activity is not situated within any National, Provincial or Local Protected areas (Refer to Figures 4 and 5).</p> <p>The closest National Park to the proposed prospecting site is the Marakele National Park, situated approximately 70 km north-east of the site. The closest protected areas are the Madikwe Nature Reserve (23 km west), the Pilansberg</p>

<ul style="list-style-type: none"> • To promote sustainable utilisation of protected areas for the benefit of people, in a manner that would preserve the ecological character of such areas; • To promote participation of local communities in the management of protected areas, where appropriate; and • To provide for the continued existence of South African National Parks. <p>In terms of Section 50 (1)(a)(ii) of this Act, the management authority of a national park, nature reserve and world heritage site may, despite any regulation or by-law referred to in section 49, but subject to the management plan of the park, reserve or site - “<i>carry out or allow an activity in the park, reserve or site aimed at raising revenue</i>”. However, Section 50 (2) states that such activity “<i>may not negatively affect the survival of any species in or significantly disrupt the integrity of the ecological systems of the national park, nature reserve or world heritage site</i>”. Furthermore, in terms Section 51 (a), the Minister or MEC is responsible for the regulations or restrictions of the development and other activities in a protected environment, “<i>which may be inappropriate for the area, given the purpose for which the area was declared</i>”.</p>		<p>Provincial Nature Reserve (situated 25 km south) and the Atherstone Nature Reserve (situated 32 km north).</p> <p>No Authorisation required.</p>
<p>National Environmental Management: Waste Act (NEM:WA) (Act 59 of 2008) and its subsequent amendments.</p> <p>This legislation aims to enforce an integrated approach to waste management, with emphasis on prevention and reduction of waste at source and, where this is not possible, to encourage reuse and recycling in preference to disposal.</p> <p>Section 16 (Chapter 4) of this Act deals with the general duty in respect to waste management and emphasises that, “<i>A holder of waste must, within the holder’s power, take all reasonable measures to:- avoid the generation of waste and where such generation cannot be avoided, to minimise the toxicity and amounts of waste that are generated; reduce, re-use, recycle and recover waste; where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner; manage the waste in such a manner that it does not endanger health or the environment or cause a nuisance through noise, odour or visual impacts; prevent any employee or any person under his or her supervision from contravening this Act; and prevent the waste from being used for an unauthorised purpose</i>”.</p> <p>Chapter 4, Part 3 of this Act deals with reduction re-use and recovery of waste, Part 4 deals with waste management activities, Part 5 covers storage collection</p>	<p>All reasonable measures must be taken to avoid the generation of waste and where such generation cannot be avoided, minimise the toxicity and amounts of waste that are generated; reduce, re-use, recycle and recover waste; where waste must be disposed of, ensure that the waste is treated and disposed of in an environmentally sound manner.</p> <p>Manage the waste in such a manner that it does not endanger human health or the environment or cause a nuisance through noise, odour or visual impacts.</p> <p>Prevent any employee or any person from contravening this Act; and prevent the waste from being used for an unauthorised purpose.</p>	<p>No Authorisation required.</p>

<p>and transportation of waste, Part 6 deals with treatment, processing and disposal of wastes, Part 7 covers industry waste management plans and Part 8 deals with contaminated land. Chapter 5 covers all issues regarding the licensing of waste management activities.</p>		
<p>Occupational Health and Safety Act, (Act 85 of 1993). The objective of this Act is to provide for the health and safety of persons at work. In addition, the Act requires that, “as far as reasonably practicable, employers must ensure that their activities do not expose non-employees to health hazards” (Glazewski, 2005: 575). The importance of the Act lies in its numerous regulations, many of which will be relevant to the proposed development. These cover, among other issues, noise and lighting.</p>	<p>To ensure H&S aspects are adhered to on site.</p>	<p>No Authorisation required only implementation.</p>
<p>Noise Regulations: The proposed project would need to adhere to the following noise regulations:</p> <ul style="list-style-type: none"> • South Africa - GNR.154 of January 1992: Noise control regulations in terms of section 25 of the Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989). • South Africa - GNR.155 of 10 January 1992: Application of noise control regulations made under section 25 of the Environment Conservation Act, 1989 (Act No. 73 of 1989). • South Africa - SANS 10103:2008 Version 6 - The measurement and rating of environmental noise with respect to annoyance and to speech communication. • South Africa - SANS 10210:2004 Edition 2.2 – Calculating and predicting road traffic noise. • South Africa - SANS 10357:2004 Version 2.1 - The calculation of sound propagation by the Concawe method. <p>The ambient <u>outdoor</u> noise levels guidelines in SANS 10103:2008 is between 45dBA and 50dBA during the day and between 35dBA and 40dBA at night in rural and suburban districts respectively. SANS 10103:2008 provides typical rating levels for noise in various types of districts, as described in the table below.</p> <p>Typical rating levels for noise in various types of districts</p>	<p>Development in Rural areas should have noise levels that do not exceed the required levels as outlined in column 1.</p>	<p>No Authorisation required.</p>

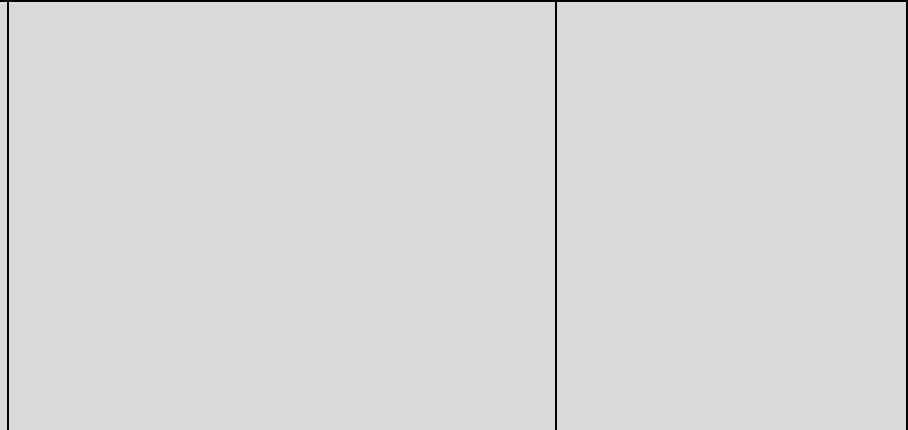
TYPE OF DISTRICT	EQUIVALENT CONTINUOUS RATING LEVEL, LREQ.T FOR NOISE					
	OUTDOORS (DB(A))			INDOORS, WITH OPEN WINDOWS (DB(A))		
	DAY-NIGHT	DAYTIME	NIGHT-TIME	DAY-NIGHT	DAYTIME	NIGHT-TIME
Rural Districts	45	45	35	35	35	25
Suburban districts with little road traffic	50	50	40	40	40	30
Urban districts	55	55	45	45	45	35
Urban districts with one or more of the following: Workshops; business premises and main roads	60	60	50	50	50	40
Central business districts	65	65	55	55	55	45
Industrial districts	70	70	60	60	60	50

Furthermore, the South African noise control regulations describe a disturbing noise as any noise that exceeds the ambient noise by more than 7dB. This difference is usually measured at the complainants location should a noise complaint arise. Therefore, if a new noise source is introduced into the environment, irrespective of the current noise levels, and the new source is louder than the existing ambient environmental noise by more than 7dB, the complainant will have a legitimate complaint.

Guidelines for expected community responses to excess environmental noise is reflected in the table below.

Categories of environmental community / group response (SANS 10103:2008)

EXCESS Lr dB (A)	ESTIMATED COMMUNITY/GROUP RESPONSE	
	CATEGORY	DESCRIPTION
0 - 10	Little	Sporadic complaints
5 - 15	Medium	Widespread complaints
10 - 20	Strong	Threats of community / group action
> 15	Very Strong	Vigorous community / group action



<p>The Hazardous Substances Act (HSA) (Act 15 of 1973) The Act aims to manage hazardous substances. It is the principal national legislation that controls the transportation, and manufacturing, storage, handling, treatment or processing facilities for any substance that is dangerous or hazardous (Groups I-IV).</p>	<p>Manage hazardous substances in such a manner that it does not endanger human health or the environment.</p> <p>Prevent hazardous substances from being used for an unauthorised purpose.</p>	<p>No Authorisation required.</p>
--	---	-----------------------------------

<p>Conservation of Agricultural Resources Act, (Act 43 of 1983)</p> <p>The Conservation of Agricultural Resources Act, No. 43 of 1983 aims to control over-utilisation of the natural agricultural resources to promote the conservation of soil, water sources and vegetation through the combat of weeds and invader plants. Regulations 15 and 16 under this Act, which relate to problem plants were amended in March 2001.</p> <p>This is achieved by:</p> <ul style="list-style-type: none"> • Production potential of land is maintained, • Preventing and combating erosion, • Preventing and combating weakening or destruction of the water sources, and • Protecting vegetation and combating of weeds and invader plants. <p>The Act provides a list of declared weeds and invader plants as well as indicators of bush encroachment. In terms of weeds and invader plants:</p> <ul style="list-style-type: none"> • A land user shall control any category 1 plants that occur on any land or inland water surface. • No person shall, except in or for purposes of a biological control reserve – <ul style="list-style-type: none"> ○ Establish, plant, maintain, multiply or propagate weeds and invader plants; ○ Import or sell propagating material of category weeds and invader plants; and ○ Acquire propagating material of weeds and invader plants <p>These lists include:</p> <ul style="list-style-type: none"> • Combating of category 1 plants (Section 15A) according to CARA (Act No 43 of 1983) • Combating of category 2 plants (Section 15B) according to CARA (Act No 43 of 1983) <p>The executive officer may, on good cause shown in writing by the land user, grant written exemption from compliance with one or more of the requirements of sub-regulations (1), (3), (5), (6), (8) and (9) on such conditions as the executive officer may determine in each case.</p> <p>In order to give meaning to mechanisms aimed at maintaining production potential of land provided for in CARA, The Minister of Agriculture published</p>	<p>An invasive species monitoring, control and eradication plan for land/activities under the control of the proponent should be developed as part of the environmental plans in accordance with CARA.</p>	<p>No authorisation required, only implementation.</p>
--	--	--

<p>regulations under CARA (CARA Regulations) which prescribes control measures which all land users have to comply, in respect of a number of matters, including the:</p> <ul style="list-style-type: none">• Cultivation of virgin soil.• Protection of cultivated land.• Utilisation and protection of the veld.• Control of weed and invader plants.• Prevention and control of veld fires and the restoration and reclamation of eroded land. <p><i>It should be noted that the CARA regulations for the legal obligations regarding alien invasive plants in South Africa have been superseded by the National Environmental Management: Biodiversity Act, 2004 (Act no. 10 of 2004) – Alien and Invasive Species (AIS) Regulations which was promulgated on 1 October 2014. However, CARA has not been repealed and is still included as a reference point to use in terms of the management of AIS where certain species may not be included in the NEM:BA AIS list.</i></p>		
---	--	--

<p>The Minerals and Petroleum Resources Development Act (MPRDA) (No. 28 of 2002), as amended in 2013</p> <p>The Minerals and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA) makes provision for equitable access to and sustainable development of the South Africa's mineral and petroleum resources and to provide for matters connected therewith.</p> <p>The objects of this Act are (amongst others) to:</p> <ul style="list-style-type: none"> • Give effect to the principle of the State's custodianship of the nation's mineral and petroleum resources. • Promote equitable access to the nation's mineral and petroleum resources to all the people of South Africa. • Give effect to section 24 of the Constitution by ensuring that the nation's mineral and petroleum resources are developed in an orderly and ecologically sustainable manner while promoting justifiable social and economic development. <p><u>Application for a prospecting right</u></p> <p>Any activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) requires an application for environmental authorisation in terms of GNR. 326 [the National Environmental Management Act (107/1998): Amended Environmental Impact Assessment Regulations, 2017 – the EIA Regulations] which requires a Basic Environmental Assessment. The two applications must be submitted simultaneously to DMR.</p>	<p>A Prospecting Right (PR, with a bulk sample) application must be submitted to DMR.</p> <p>A Public Consultation Report and a Basic Assessment / S&EIA report (whichever is applicable) must be submitted to DMR within the stipulated timeframes.</p>	<p>A PR has been applied for. This report (the Basic Assessment report) will be submitted in due course.</p>
<p>* Bojanala Platinum District Municipality and the Moses Kotane Local Municipality - IDPs and SDFs</p>	<p>The prospecting area is situated within this District and Local Municipality.</p>	<p>No Authorisation required.</p>
<p>* Mucina, L. & Rutherford, M.C. (eds) 2006. The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria. - Applicable Shapefiles (2012)</p>	<p>Spatial tools for Vegetation Types</p>	<p>No Authorisation required.</p>
<p>* North West Biodiversity Sector Plan (2015)</p>	<p>Spatial tools for CBAs</p>	<p>No Authorisation required.</p>
<p>* South African National Land Cover Dataset (2014)</p>	<p>Spatial tools for land cover</p>	<p>No Authorisation required.</p>
<p>* National Freshwater Ecosystem Priority Areas (2014)</p>	<p>Spatial tools for Wetlands, Rivers and drainage areas.</p>	<p>No Authorisation required.</p>
<p>* These aspects and their applicability to the study area has been discussed in detail I n section iv below.</p>		

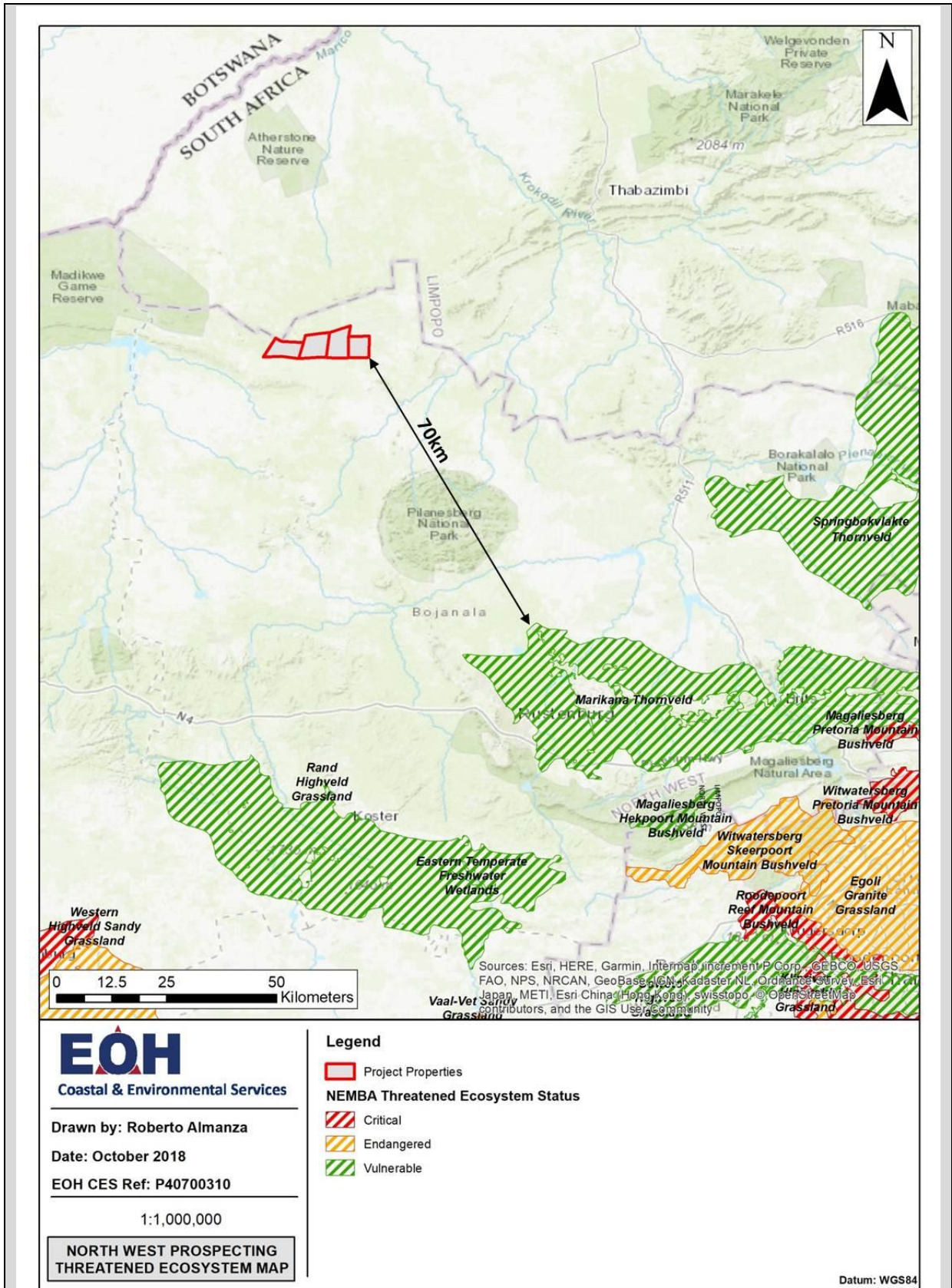


Figure 3: The proposed development does not fall within an area classified as a threatened ecosystem in terms of NEM:BA

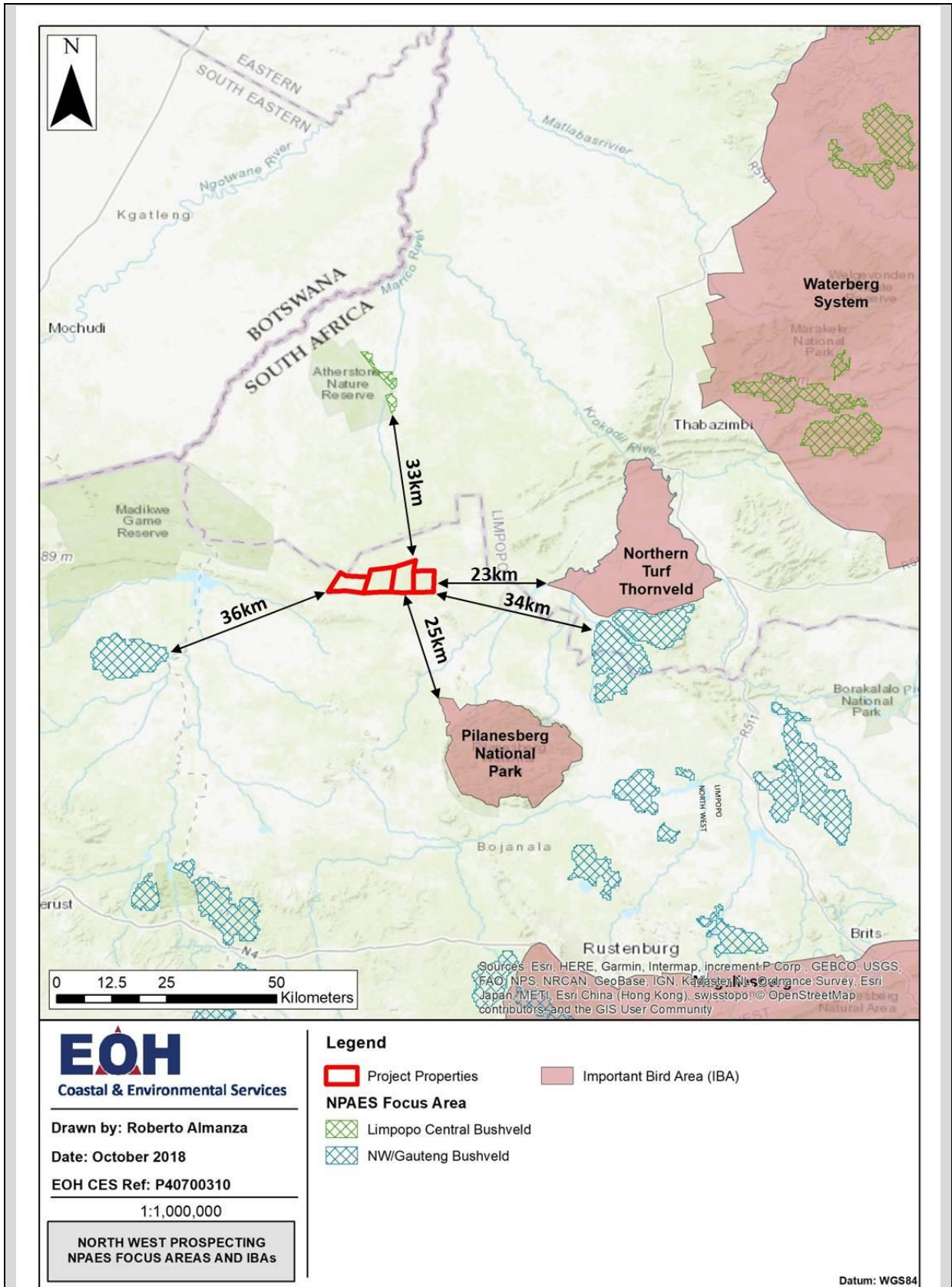


Figure 4: The proposed development does not fall within an area classified as an Important Bird Area or a NPAES Focus Area

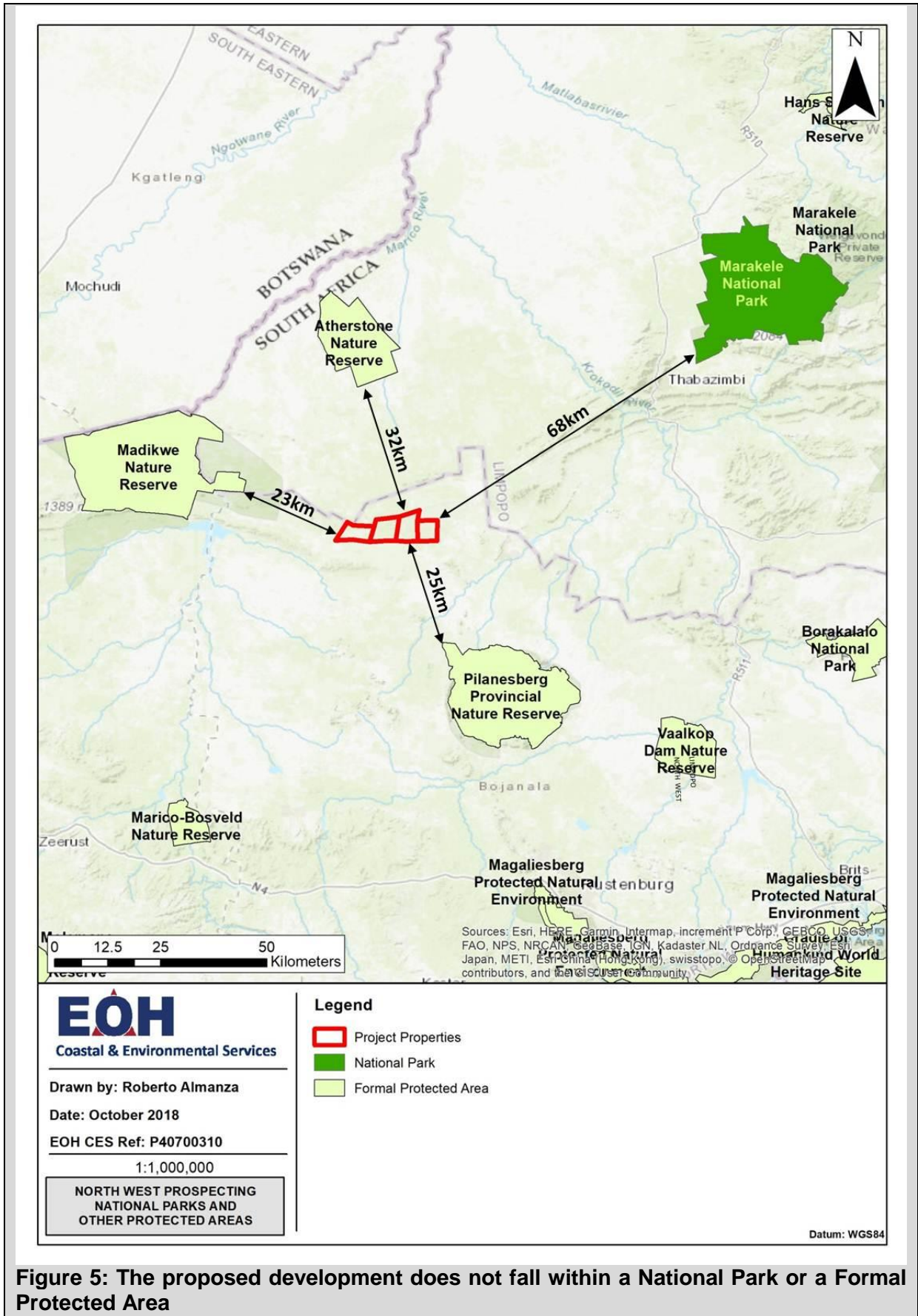


Figure 5: The proposed development does not fall within a National Park or a Formal Protected Area

f) Need and desirability of the proposed activities.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

According to the Bojanala Platinum District Municipality's IDP (2017/2022), the main economic drivers of the municipal area are agriculture, tourism, manufacturing, mining and the service industry. Bojanala Platinum District (BPD) is located along the Merensky Reef, which account for the district municipality being the leader in the production Platinum Group Metals. As a result mining is the biggest employer in the district. The IDP also states that the main economic activities within the Moses Kotane Local Municipality is agriculture, tourism, and mining. In 2015, the mining sector was the largest within Bojanala Platinum District Municipality accounting for R 61.1 billion or 51.8% of the total GVA in the district municipality's economy. For the period of 2005-2015, the mining sector had an average annual growth rate of 0.97%. One of the principles of the BPD Municipalities SDF is *"to achieve a sustainable equilibrium between urbanisation, conservation, tourism, mining and agricultural activities within the District, by way of proper land use management and in partnership with the private sector and local communities"*. Another principle is *"to maximally utilise the mining potential in the municipal are, including optimising backward and forward linkages, without impeding negatively on the tourism and agricultural potential"*. One of the development objectives of the Moses Kotane Local Municipality's LSDF is *"to protect, enhance and manage the natural environmental resources in the municipality in order to ensure a sustainable equilibrium between mining, tourism and agricultural industries in the area"*. Both the District and Local municipalities therefore support economic development via mining activities, provided that it is implemented in a sustainable manner.

According to the Moses Kotane Local Municipality's IDP (2017/2022), 51% of people currently residing within the municipality are unemployed. A lack of employment in the area has resulted in high poverty rates, lack of food security, lack of tax base and poor economic development. Successful prospecting may thus lead to the development of local mines and associated industries and be the catalyst for skills development and job creation in a generally impoverished area with very high levels of unemployment and poor economic development.

The proposed prospecting activities are needed in order to increase the confidence in the known ore resource and obtain detailed geophysical information on the area utilising modern airborne techniques in order to locate new geophysical targets that could correspond to mineralisation and drill these with the aim of increasing the resource size and improving the economics of the deposit. These minerals are of significant value and the mining thereof has the potential to contribute positively to the South African economy. The geological characteristics of the preferred location meet the prerequisites for concentration of these minerals. Prospecting is therefore confined to the preferred location in order to prevent unnecessary impacts on alternative locations.

g) Motivation for the overall preferred site, activities and technology alternative.

The applicant specialises in exploration/prospecting and mining and these are thus the only services the company provides. The applicant is also committed to utilising the best technology currently available, thus no technology alternatives will be considered. The initial layout was revised to avoid sensitive areas such as wetlands and drainage lines (refer to Figures 6 and 7 included below). The CBA in the western part of the site could not be avoided as the mineralisation along the dolomite/shale contact in this area needs to be tested.

However, it should be noted that according to the Ecological Assessment, this area has been degraded by livestock farming. Thus based on the small footprint of the drill holes and trenches and the degradation of the site, it was not deemed necessary to move these holes from an ecological perspective. In addition, drill holes and trenches within 50 m of the 7 heritage sites present on site, were moved outside of these buffer areas (please refer to Figure 6 included below for all layout related changes).

The area is known to host a low grade gold-silver deposit known as Dwaalboom, hosted by dolostones of the Malmani Subgroup, Transvaal Supergroup. The mineralisation is confined to mineralised vein stockworks within a 14-25 m wide shallow dipping ore body containing about 20 million tons of ore at an average grade of 1.1 g/t gold.

The deposit has been drilled extensively in the past, but remains open-ended along strike. The primary objective of the current prospecting application will be to increase the confidence in the known ore resource and to obtain detailed geophysical information on the area. This will be achieved by utilising modern airborne techniques in order to locate new geophysical targets that could correspond to mineralisation and drill these with the aim of increasing the resource size and improving the economics of the deposit.

In addition, successful prospecting may lead to the development of local mines and associated industries and be the catalyst for job creation in a generally impoverished area with very high levels of unemployment. It is apparent that large sections of the land have been degraded as a result of livestock farming and thus no severe biophysical consequences are anticipated should the operation proceed, however the potential to create a number of job opportunities may be lost should the prospecting not proceed.

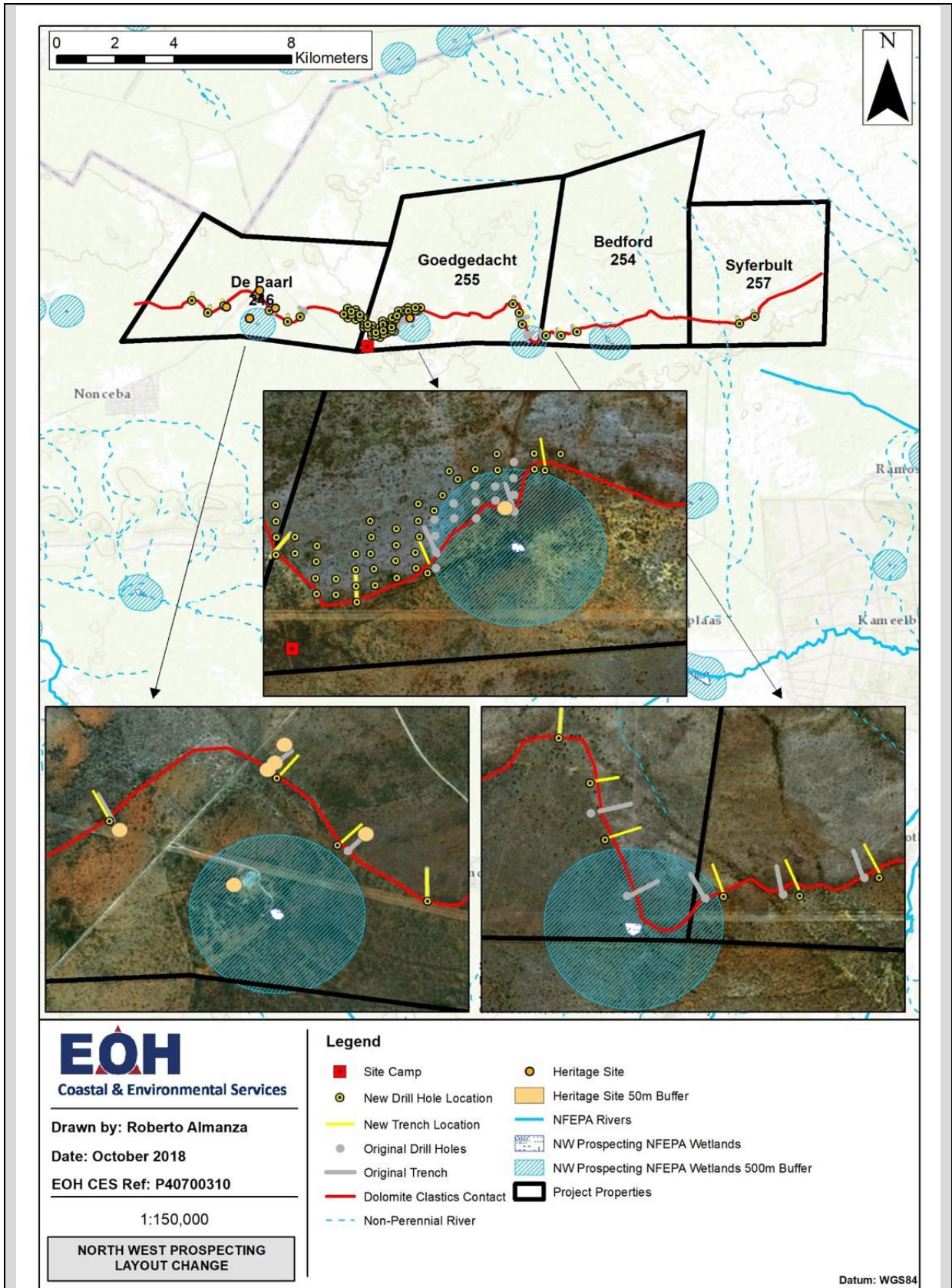


Figure 6: Layout Revisions

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

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

i. Details of the development footprint alternatives considered.

With reference to the site plan provided as Appendix 4 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

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

a) Preferred Property/Location Alternative:

It should be noted that prospecting is a “locality bound” industry (it has to take place where the resources are anticipated to occur) thus no alternative locations for prospecting can be assessed. It should also be noted that the initial layout was revised to take into consideration the environmental constraints and this will thus be the preferred layout (refer to Figure 6 included above). This has been done by ensuring that drill sites and trenches are located outside of sensitive areas such as drainage lines and wetlands and their regulatory buffers as well as heritage sites (including a 50 m buffer). The CBA in the western part of the site could not be avoided as the mineralisation along the dolomite/shale contact in this area needs to be tested. However, it should be noted that according to the Ecological Assessment, this area has been degraded by livestock farming. Thus based on the small footprint of the drill holes and trenches and the degradation of the site, it was not deemed necessary to move these holes from an ecological perspective.

b) Preferred Activity Type:

Since the core business of the project developer is prospecting, exploration and mining, the fundamental alternative of a development other than the proposed prospecting and associated infrastructure is therefore technically not feasible in this instance. For this reason no fundamental alternative to prospecting has been considered in this assessment. A phased prospecting approach has been chosen as the preferred method in order to avoid unnecessary environmental impacts as well as to avoid unnecessary costs if the prospecting results in no mineable resources being found. The drill sites and trenches have been placed in areas where it will not impact on any surface water resources (wetlands, rivers or drainage lines), heritage resources and within least concern vegetation units.

c) Preferred Design and Layout of the Activity:

The preliminary layout and design makes provision for the proposed location of drill sites and trenches based on a desktop analysis of the area, an ecological assessment and a heritage assessment. Based on the results of these assessments, the initial layout has been designed in such a manner to avoid any potential sensitive areas (such as wetlands and drainage lines and heritage sites), to minimise the need for additional access roads, and to minimise impacts on existing agricultural activities and homesteads. The final locations of all infrastructure will be discussed with the relevant landowners and land occupiers and the client shall endeavour to accommodate them on the precise location of access tracks within the area where practical. At this stage of the process, it is anticipated to use existing roads as drill and trench sites are accessible via existing roads and tracks.

d) Preferred Technology of the Activity:

The applicant is committed to utilising the best technology currently available. The technology used in the invasive phase of the prospecting activity (i.e. drilling and trenching) has been

chosen to undertake the resource determination and confirmation in the most effective and cost-saving manner, while avoiding any unnecessary impacts on the biophysical and social environment.

e) Preferred Operational Aspects of the Activity:

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

f) 'No-go' alternative:

The no-go option assumes that the site remains as it is – i.e. no prospecting activities will take place. The proposed prospecting activities fall within two vegetation types, i.e. Madikwe Dolomite Bushveld and Dwaalboom Thornveld, the majority of the prospecting activities fall within the latter. Dwaalboom Thornveld forms part of the Savanna Biome and as such consists of a grassland mosaic with scattered woody species or clumped trees and scrubs. Both vegetation types are classified as least concern. The majority of the area is under the custodianship of the Department of Rural Development and Land Reform and as such all farms with the exception of Syferbult 257 KP, were demarcated into manageable Agricultural Lease Units and allocated to previously disadvantaged farmers in terms of short term lease agreements. Based on the site visit, there is evidence that Syferbult 257 KP is utilised for the same purpose. As a result and according to the Ecological Assessment the area is mostly degraded due to overgrazing from livestock farming. As such species diversity is generally low and some alien and invasive species have spread throughout the area. Some scattered species of conservation concern such as aloes were observed.

Four NFEPA wetlands were identified along the southern boundary of the site. In addition, a number of non-perennial drainage lines were also identified (topographical mapping and site visit). The initial layout was thus amended and all drill holes and trenches situated within the regulatory buffers of these areas (i.e. 500 m from wetlands and 100 m from drainage lines) were moved to ensure that no water courses will be impacted by the proposed development.

Seven heritage sites were found to be present on site. The initial layout was thus amended and all drill holes and trenches situated within 50 m of these areas were moved to ensure that no heritage sites will be impacted by the proposed development.

The no-go option would thus mean that agricultural activities will carry on as per normal and it is therefore likely that the site will continue to be degraded and further encroachment of alien and invasive species would thus be expected. As stated above no drilling or trenching will be occurring within any wetland, drainage lines or their regulatory buffers. Should the no-go option become the preferred option, it may have several negative impacts including the loss of potential employment associated with the prospecting activity as well as any future mining activities, the loss of potential mineral resources which could be sold or refined, and also an overall negative effect on the South African economy, as the mining industry contributes a significant portion of the GDP and forex.

ii. Details of the Public Participation Process Followed

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

I&APs play an important role in the process, as many of their concerns and issues can be included in the project proposal, to ensure a development which is as environmentally and socially acceptable as possible. In order to inform the public of the proposed project and to invite members of the public to register as I&APs, the proposed project was advertised in the Rustenburg Herald, Background Information Documents (BIDs) were hand delivered, posted or emailed and site notices were placed in conspicuous areas on site. This is in accordance with the legal requirements as set out by the MPRDA, NEMA and the 2014 EIA Regulations (and amended 07 April 2017). A more detailed description of these activities is included below:

Based on a Windeed search conducted on the 1st of September 2018, it was established that the relevant properties are registered to the National Government of the Republic of South Africa. In order to determine which government department has jurisdiction in relation to these properties, EOH CES contacted Cllr Diphetogo Mmolawa, as there were no contact details available for Cllr Karel Sedile at the time of enquiry. EOH CES was referred to Mr Mmope at the Moses Kotane Local Municipality. Mr Mmope in turn referred us to Mr Daniel Masina at the Department of Rural Development and Land Reform, who confirmed that the properties are under the custodianship of the Department of Rural Development and Land Reform. EOH CES requested the contact details of the land occupiers in order to inform them of the proposed prospecting activities, however no information in regards to this has been received to date. As such EOH CES conducted a site visit on the 28th of September 2018, in order to notify land occupiers of the proposed development. Representatives of EOH CES met with the deputy head of the community trust in the area, Mr Mandisi. He stated that the land is managed by the community trust and as such a BID was hand delivered to him. A number of BIDs were also left at the community center for distribution to the local communities in the area. BIDs were also left for collection at the general store.

Local, provincial and national government departments, as well as adjacent landowners were sent notification letters and BIDs via e-mail. Where e-mail addresses were not available, these documents were sent via registered mail.

In addition, a notification advertisement was placed in the Rustenburg Herald newspaper on the 10th of October 2018 and two (2) site notices were placed in conspicuous sites along the boundary of the proposed prospecting area (co-ordinates site notice 1: 24°54'33.50"S and 26°44'42.80"E; co-ordinates of site notice 2: 24°54'17.59"S and 26°46'14.62"E).

A comprehensive I&AP database was established using the baseline data and contact details obtained during the site visit. The Draft BAR and EMPr (this report) will be made available for public review (a period of 30 calendar days, excluding public holidays) during which time I&APs can submit comments, issues and/or concerns. An advert will be placed to notify I&APs of the availability of the Draft reports for review (the Rustenburg Herald) once the Draft Report has been submitted to the DMR. In addition, a public meeting will held during the 30 day mandatory public participation period. All comments and concerns received will be included in the Issues and Response Trail (IRT) of the final report for submission to the DMR. Please refer to Appendix 2 for proof of all PPP documents circulated and advertised.

iii. Summary of issues raised by I&APs

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

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.	Date received	Comments received	Issues raised	EAPs responses to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and/ or responses were incorporated
AFFECTED PARTIES					
Landowner/s					
National Government of the Republic of South Africa (under the custodianship of the Department of Rural Development and Land Reform): Mr Bully Sedibe (District Director)	X	None received to date			
Lawful occupier/s of the land					
All the farms with the exception of Syferbult 257 KP, were demarcated into manageable Agricultural Lease Units and allocated to previously disadvantaged farmers in terms of short term lease agreements, thus the land is occupied by local communities. The land is managed by a community trust.	X	None received to date			
Landowners or lawful occupiers on adjacent properties					
Neophytos Demetriou	X	None received to date			
John Botes	X	None received to date			
Mr Bully Sedibe (District Director: Department of Rural Development and Land Reform)	X	None received to date			
Mr Daniel Masina	X	None received to date			
Municipal councillor					

Clr Karel Sedile (Ward 6 Councillor (Relevant Ward): Moses Kotane Local Municipality)	X	None received to date			
Clr Xolile Kheswa (Ward 1 Councillor (Neighbouring Ward): Moses Kotane Local Municipality)	X	None received to date			
Cllr Thato Joel Motshegare (Ward 5 Councillor (Neighbouring Ward): Moses Kotane Local Municipality)	X	None received to date			
Cllr Kokonyane Francina (Ward 5 Councillor (Neighbouring Ward): Thabazimbi Local Municipality)	X	None received to date			
Municipality					
Mr P Shwikwane (Municipal Manager: Bojanala Platinum District Municipality)	X	None received to date			
Cllr Nicholas Rakolle (Bojanala Platinum District Municipality)	X	None received to date			
Mr Mokopane Letsoalo (Municipal Manager: Moses Kotane Local Municipality)	X	None received to date			
Organs of state (Responsible for infrastructure that may be affected Roads Department)					
Mr Khayaletu Matrose (Department of Mineral Resources (DMR))	X	None received to date			
Mr Izak van der Merwe (Department of Agriculture Forestry and Fisheries (DAFF))	X	None received to date			
Natasha Higgitt (South African Heritage Resource Agency (SAHRA))	X	27 th of September 2018	Thank you for notifying SAHRA of the proposed development. Please note that all development applications are processed via our online portal, the South African Heritage Resources Information System (SAHRIS) found at the following link: http://sahra.org.za/sahris/ . We do not accept emailed, posted, hardcopy, faxed, website links or	Please note that this was an initial notification sent to all I&APs to notify them of the proposed application. As soon as the Draft Basic Assessment Report (BAR) is available for public review, it will be uploaded to the SAHRIS portal as per the requirements stipulated in your email. An additional notification will be sent to all I&APs to inform them that the Draft BAR is available for public review.	Section VIII

			<p>DropBox links as official submissions.</p> <p>Please create an application on SAHRIS and upload all documents pertaining to the Environmental Authorisation Application Process. As per section 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA), an assessment of heritage resources must form part of the process and the assessment must comply with section 38(3) of the NHRA.</p> <p>Once all documents including all appendices are uploaded to the case application, please ensure that the status of the case is changed from DRAFT to SUBMITTED. Please ensure that all documents produced as part of the EA process are submitted as part of the application, and are submitted to SAHRA at the beginning of the Public Review periods. Once all these documents have been uploaded, I will be able to issue an informed comment as per section 38(4) and 38(8) of the NHRA.</p>		
Mr Andries van Ross (Transnet)	X	None received to date			
Mr Alan Againz (SANRAL)	X	None received to date			
Phuti Namethe (SANParks)	X	None received to date			
Mari Morland (SANParks)	X	None received to date			
Akani Shivambu (SANParks)	X	None received to date			
Patricia Mohlala (SANParks)	X	None received to date			

Lindiwe Mbowane (SANParks)	X	None received to date			
Mr Ndlelenhle Zindela (Department of Mineral Resources (DMR)- North West)	X	None received to date			
Ms I Wesi (Department of Mineral Resources (DMR)- North West)	X	None received to date			
Mr T Phalala (Department of Mineral Resources (DMR)- North West)	X	None received to date			
Phumudzo Nethwadzi (Department of Mineral Resources (DMR)- North West)	X	None received to date			
Dr Tseliso Ntili (North West Department of Water and Sanitation)	X	None received to date			
Ms Wendy Ralekoa (North West Department of Water and Sanitation)	X	None received to date			
Mr. J Maluleke (North West Department of Water and Sanitation)	X	None received to date			
Mr P Manzini (North West Department of Public Works and Roads)	X	None received to date			
Tshegofatso Lekgari (Department of Rural, Environment and Agricultural and Development)	X	None received to date			
Percy Matlapeng (Department of Rural, Environment and Agricultural and Development)	X	None received to date			
Mr Mosiane (North West Provincial Heritage Authority (NWPHA))	X	None received to date			
Mr Boeta du Toit (Agri North West (Farmers Union))	X	None received to date			
Mr MG Morule (National African Farmers' Union (NAFU))	X	None received to date			
Eskom, Telkom, DWS etc.					

Mr John Geeringh (Eskom)	X	27 th of September 2018	Please find attached general requirements for works at or near Eskom infrastructure and servitudes. Please send me KMZ files of the affected properties.	The general requirements for works at or near Eskom infrastructure and servitudes are noted. Please find attached the KMZ files of the proposed drill hole and trench locations as well the project affected properties.	Section (iv)(1)(c)
Communities					
Mr Mandisi (deputy head of the community trust)	X	None received to date			
Dept. Land Affairs					
Mr Bully Sedibe (District Director: Department of Rural Development and Land Reform)	X	None received to date			
Mr Hugh Zackey (Deputy Director: Bojanala District (Land Reform): North Wes District Offices: Department of Rural Development and Land Reform)	X	None received to date			
Mr Lengane Bogatsu (Chief Director: Land Restitution Support (North West): Land Claims Commissioner: Department of Rural Development and Land Reform)	X	4 th of October 2018	Kindly find the attached letters. <u>Four (4) letters were attached detailing the land claim status of the project properties.</u>	Thank you for providing us with the correspondence relating to the land claims.	Section VIII
Traditional Leaders					
Based on correspondence with Mr Mandisi (deputy head of the community trust) on site, the land is managed by the community trust and not tribal land.	X	None received to date			
Dept. Environmental Affairs					
Ms Rose Masela (Department of Environmental Affairs (DEA) – Biodiversity)	X	None received to date			
Danie Smit (DEA: Integrated Environmental Authorisations (Protected Areas))	X	None received to date			

Ms Toinette Van der Merwe (Department of Environmental Affairs (DEA))	X	None received to date			
Mr Ernest Mokgane (Department of Environmental Affairs (DEA) - Protected Areas Section)	X	None received to date			
Other Competent Authorities Affected					
All other competent authorities are listed under organs of state above	X	None received to date			
<u>OTHER AFFECTED PARTIES</u>					
Mr Madzivhandila Tovhowani (Thatong Development Consulting CC)	X	None received to date			
Mr Daniel Marnewick (BirdLife South Africa)	X	None received to date			
Dr Hanneline Smit-Robinson (BirdLife South Africa)	X	None received to date			
Ms Suzanne Erasmus (WESSA Northern Cape)	X	None received to date			
Ms Nikki Veenstra (WESSA Head Office)	X	None received to date			
<u>INTERESTED PARTIES</u>					
None other than the I&APs listed above					

- iv. **The Environmental attributes associated with the alternatives.** (The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)

(1) Baseline Environment

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

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

GEOGRAPHICAL ENVIRONMENT:

The Magisterial District of Bojanala is situated in the North West Province. The proposed site falls within the Moses Kotane Local Municipality seated in the Bojanala Platinum District Municipality and covers an area of approximately 5,200 km². The proposed site is 10,036 hectares (of which 1.65 ha will be utilised for prospecting purposes) in extent and situated 68 km southwest of the town of Thabazimbi. Please refer to Figure 1 included above.

PHYSICAL ENVIRONMENT:

A. Climate

The largest urban area in proximity to the proposed application area is Rustenburg. Rustenburg normally receives about 513 mm of rain per year, with most rainfall occurring during mid-summer. The chart below (lower left) shows the average rainfall values for Rustenburg per month. It receives the lowest rainfall (0 mm) in June and the highest (101 mm) in January. The monthly distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Rustenburg range from 19.3°C in June to 29.4°C in January. The region is the coldest during July when the mercury drops to 1.7°C on average during the night. The chart below (lower right) provides an indication of the monthly variation of average minimum daily temperatures.

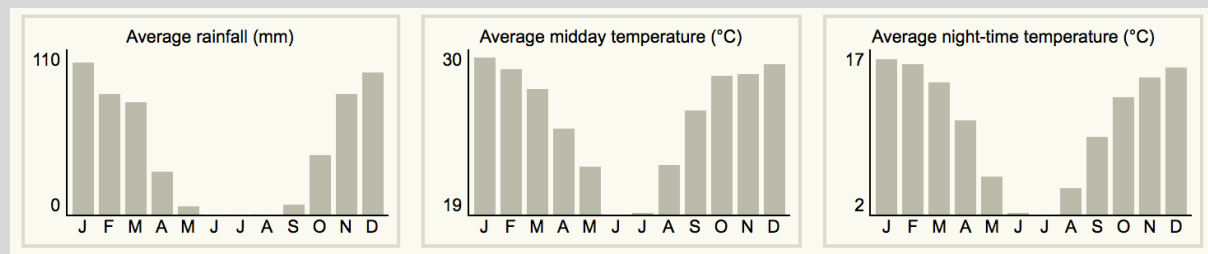


Figure 7: Graphs (from left to right) showing the average monthly rainfall; average monthly midday temperature; and average monthly night-time temperatures for Rustenburg (SA Explorer, 2015)

B. Topography, Geology and Soils (Source: www.geoscience.org.za)

The general topography of the broader study area is relatively flat with a gradual increase in elevation towards the north of the application area (Figure 9).

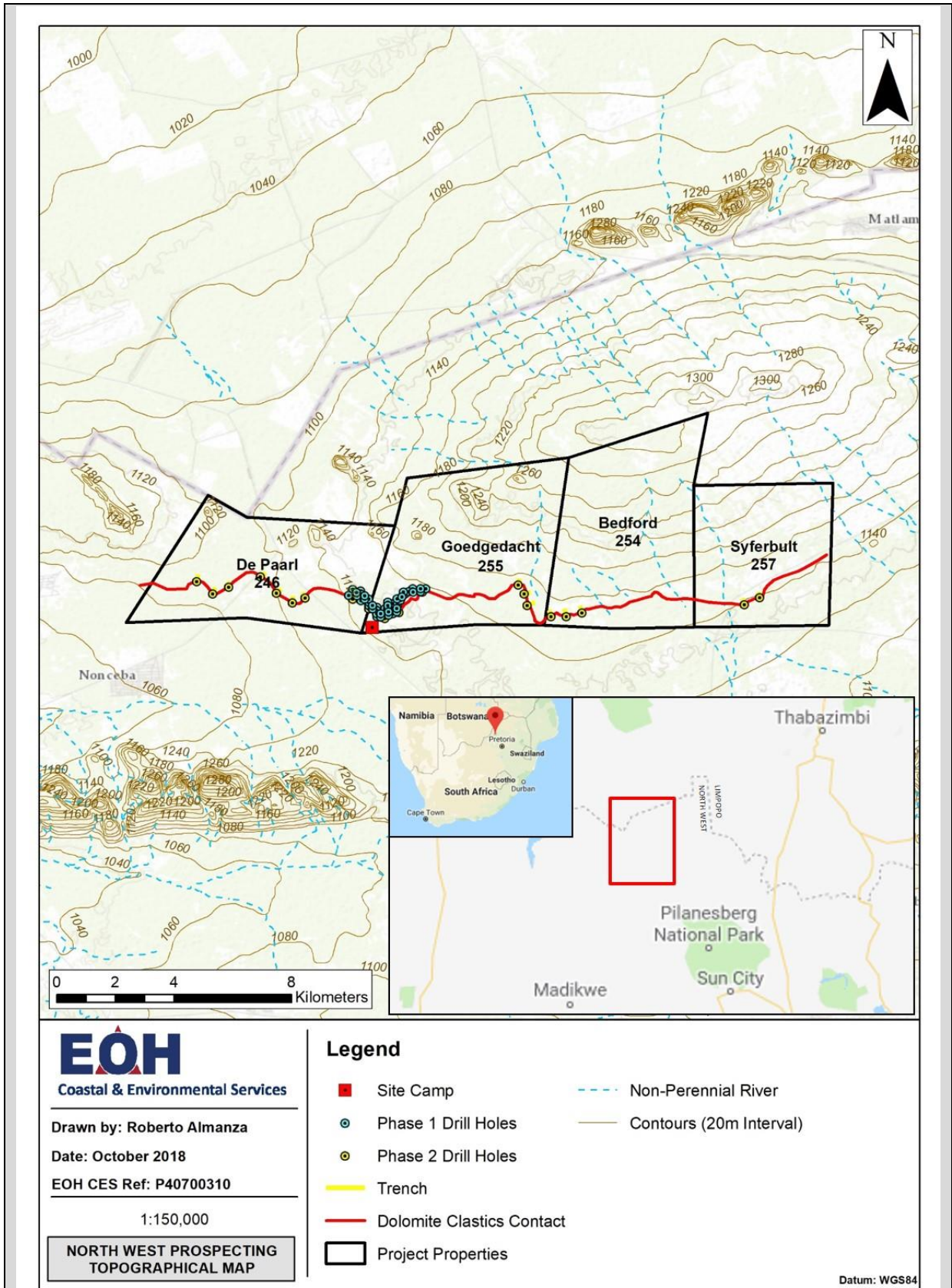


Figure 8: Topography of the study area

Figure 10 below shows the east-west elevation profile of the application area along the length of the proposed drill sites. The application area is roughly 21 km long with an average elevation

of 1,134 m ranging from 1,084 m in the west to 1,129 m in the east of the application area. The maximum elevation is 1,170 m.



Figure 9: East-West elevation profile of the application area

Figure 11 shows the north-south elevation profile of the application area. The average elevation of 1,179 m ranges from 1,197 m in the north to 1,136 m in the south of the application area. The maximum elevation is 1,243 m.

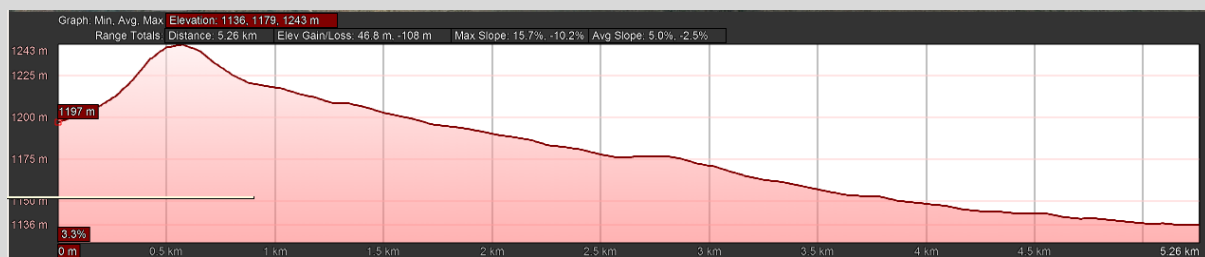


Figure 10: North-South elevation profile of the application area

The northern portion of the application area falls within the Malmani Dolomite Subgroup of the Chuniespoort Group of the Transvaal Supergroup. Geological dates for these rocks indicate that they were formed between 2.6-2.5 billion years ago, making this one of the oldest dolomite formations known.

The Malmani Subgroup is situated northwest of Johannesburg. It is characterised by basal quartz arenites, a thick succession of dolomites and upper iron formations. These materials contain high levels of calcium carbonate, and thus such rock formations are often referred to as carbonates.

The southern section of the application area falls within the Pretoria Group of the Transvaal Supergroup. This group is dominated by numerous alternating mudrock and sandstone units, and characterised by clastic sedimentary and volcanic rocks.

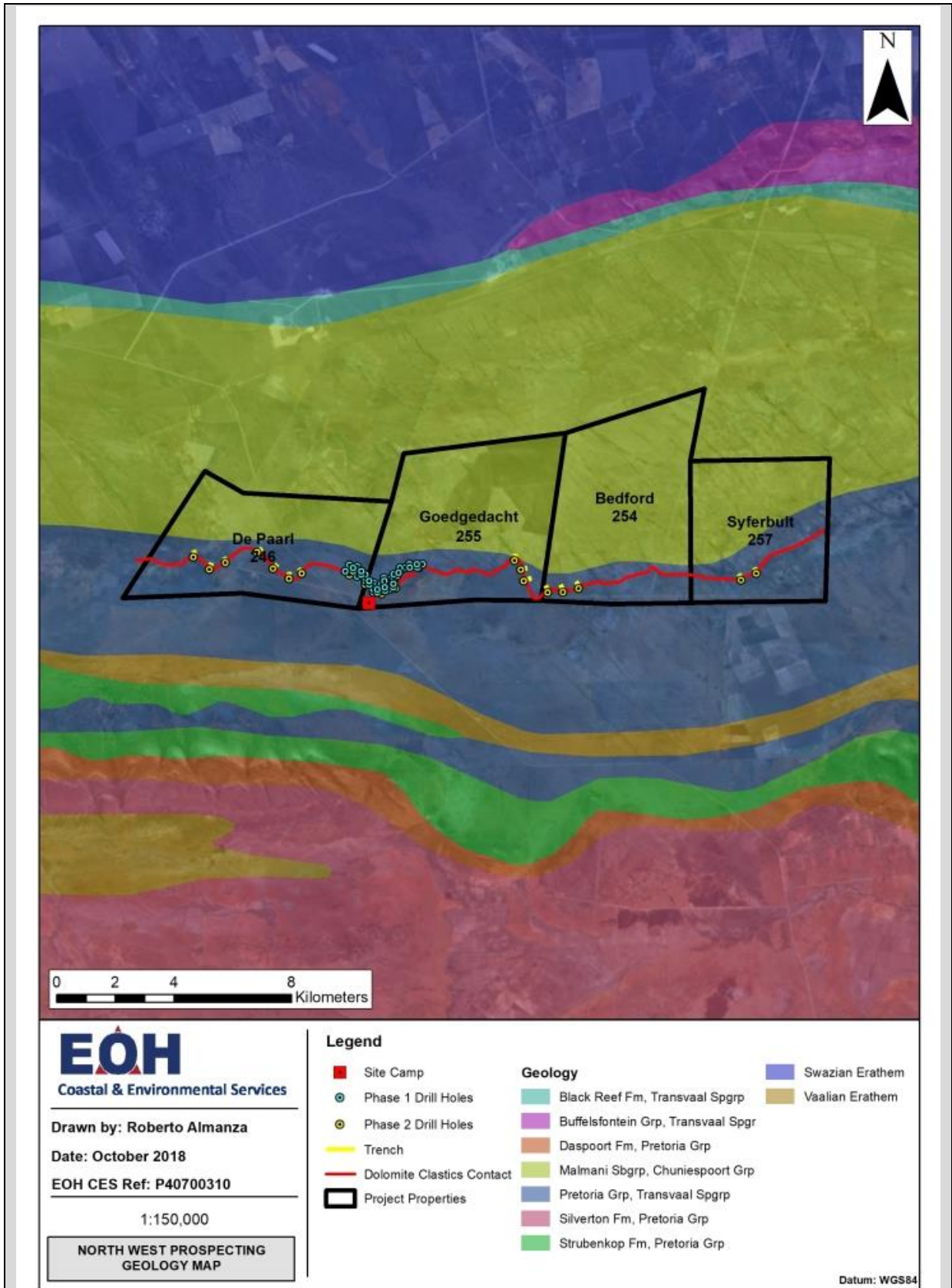


Figure 11: Geology of the study area

The soils within the application area are classified as Lithic Leptosols in the northern portions (characterized by soils limited in depth by continuous coherent and hard rock within 10 cm of

the surface), Ferric Luvisols in the southern portions (iron rich soils) and Calcic Vertisols in the eastern portions (higher clay content in all horizons).

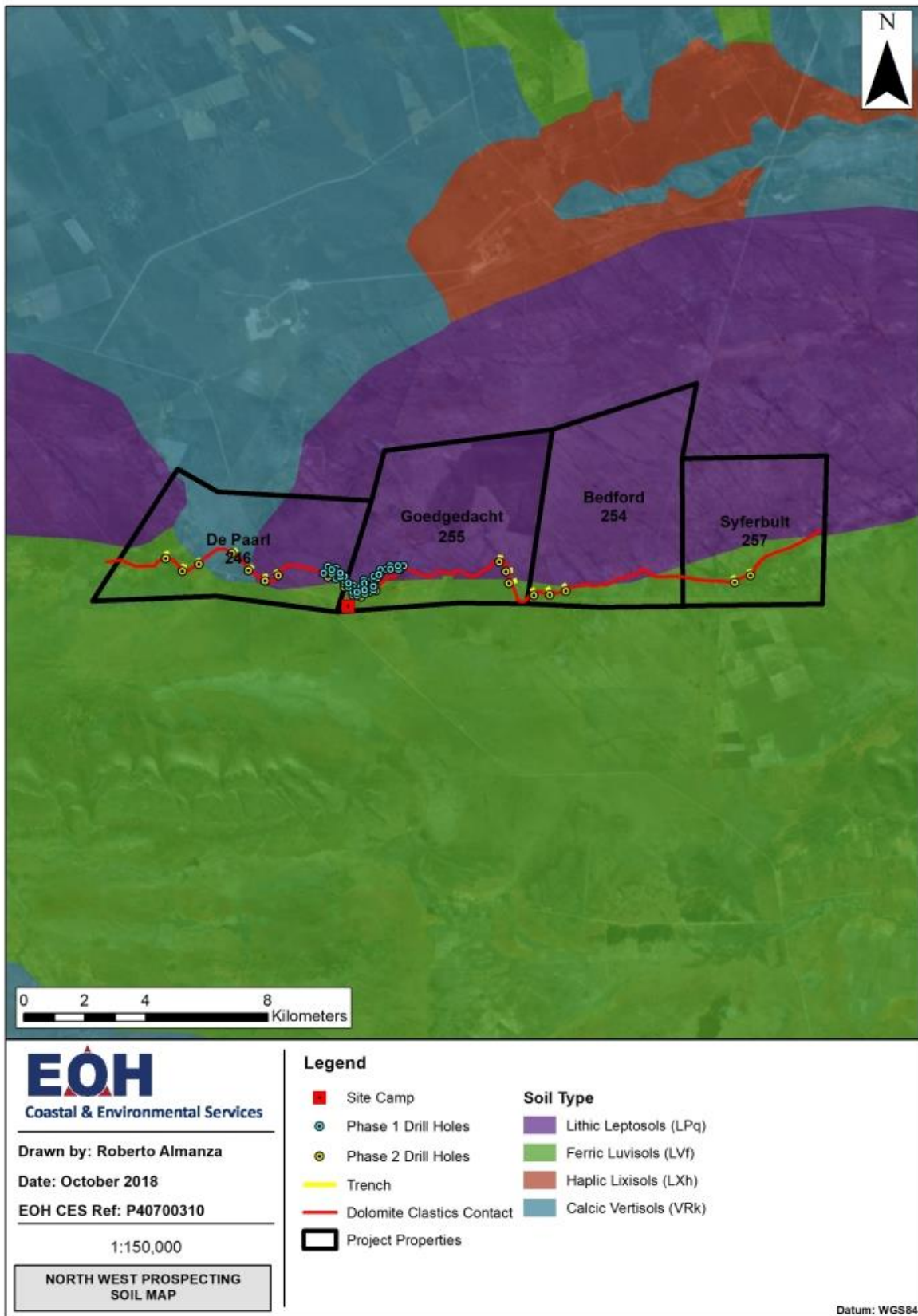


Figure 12: Soils of the study area

C. Surface Water Features

The South African National Biodiversity Institute (SANBI) compiled a National Wetland Inventory, which aims to map and classify (i.e. type) the major wetlands and water bodies in the country at a coarse spatial scale. A wetland classification system is required for application to the National Wetland Inventory, so that different types of wetlands can be distinguished for management and conservation purposes.

This classification system is intended to be used throughout the country for a number of different applications, largely with a view to facilitating common usage of terminology amongst wetland scientists and managers. However, at the same time, it is envisaged that further refinements to the classification system may be necessary in the future, to address problems that may be encountered in its application by a wide range of different users for a number of different purposes. As such, the classification system presented in this report should not be seen as the final word but, rather, as a “living” work in progress that will be continuously improved. The NFEPA programme provides strategic spatial priorities for conserving South Africa’s freshwater ecosystems and supports sustainable use of water resources. These priority areas are called Freshwater Ecosystem Priority Areas, or FEPAs. Wetland ecosystem types are used by NFEPA for representing natural examples of the diversity of wetland ecosystem types across South Africa. Wetlands of the same ecosystem type are expected to share similar functionality and ecological characteristics. Information used to classify FEPAs included:

- Representation of ecosystem types and flagship free-flowing rivers;
- Maintenance of water supply areas in areas with high water yield;
- Identification of connected ecosystems;
- Representation of threatened and near-threatened fish species and associated migration corridors; and
- Preferential identification of FEPAs that overlapped with:
 - Any free-flowing river;
 - Priority estuaries identified in the National Biodiversity Assessment (2011); and
 - Existing protected areas and focus areas for protected area expansion identified in the National Protected Area Expansion Strategy.

There are no identified NFEPA rivers traversing the site. According to the topographical map there are a number (5) non-perennial streams traversing the site (refer to Figure 8). No drill pads, drill holes or trenches will be located within these systems or within their 100 m regulatory buffers.

Four (4) NFEPA wetlands occur along the southern boundary of the proposed prospecting site (refer to Figure 13). These wetlands are classified as artificial slope seeps and artificial bench flats. It should be noted that the initial layout has been revised to ensure that no drill pads, drill holes or trenches will be located within any of these identified wetlands or their 500 m regulatory buffers.



EOH
Coastal & Environmental Services

Drawn by: Roberto Almanza
Date: October 2018
EOH CES Ref: P40700310

1:150,000

**NORTH WEST PROSPECTING
NFEPA RIVERS AND WETLANDS MAP**

- Legend**
- Site Camp
 - Phase 1 Drill Holes
 - Phase 2 Drill Holes
 - Trench
 - Dolomite Clastics Contact
 - NW Prospecting NFEPA Rivers
 - NW Prospecting NFEPA Rivers 100m Buffer
 - NW Prospecting NFEPA Wetlands
 - NW Prospecting NFEPA Wetlands 500m Buffer
 - Project Properties

Datum: WGS84

Figure 13: Surface Water features according to NFEPA

BIOLOGICAL ENVIRONMENT:

A. National Vegetation (Mucina and Rutherford, 2006-2012)

Mucina and Rutherford (2012) updated the National Vegetation map of 2006 as part of a South African National Biodiversity Institute (SANBI) funded project "...in order to provide floristically based vegetation units of South Africa, Lesotho and Swaziland at a greater level of detail than had been available before." The map was developed using a wealth of data from several contributors and resulted in the best national vegetation map to date, the last being that of Acocks, developed over 50 years ago. The map and accompanying book describe each vegetation type in detail, along with the most important species, including endemic species and those that are biogeographically important. This is the most comprehensive data for vegetation types in South Africa. The accompanying shapefiles were updated in 2012.

The study area falls within the Savanna Biome as per the SANBI classification (Mucina and Rutherford, 2006). The Savanna Biome is the largest biome in Southern Africa, occupying 46% of its area, and over one-third of South Africa. It is well developed over the Lowveld and Kalahari Region of South Africa and is also the dominant vegetation in Botswana, Namibia and Zimbabwe. It is characterised by a grassy ground layer and a distinct upper layer of woody plants. Where this upper layer is near the ground the vegetation may be referred to as Shrubveld, where it is dense as Woodland, and the intermediate stages are locally known as Bushveld.

According to Mucina and Rutherford (2006), the study area includes two distinct vegetation types – Madikwe Dolomite Bushveld and Dwaalboom Thornveld.

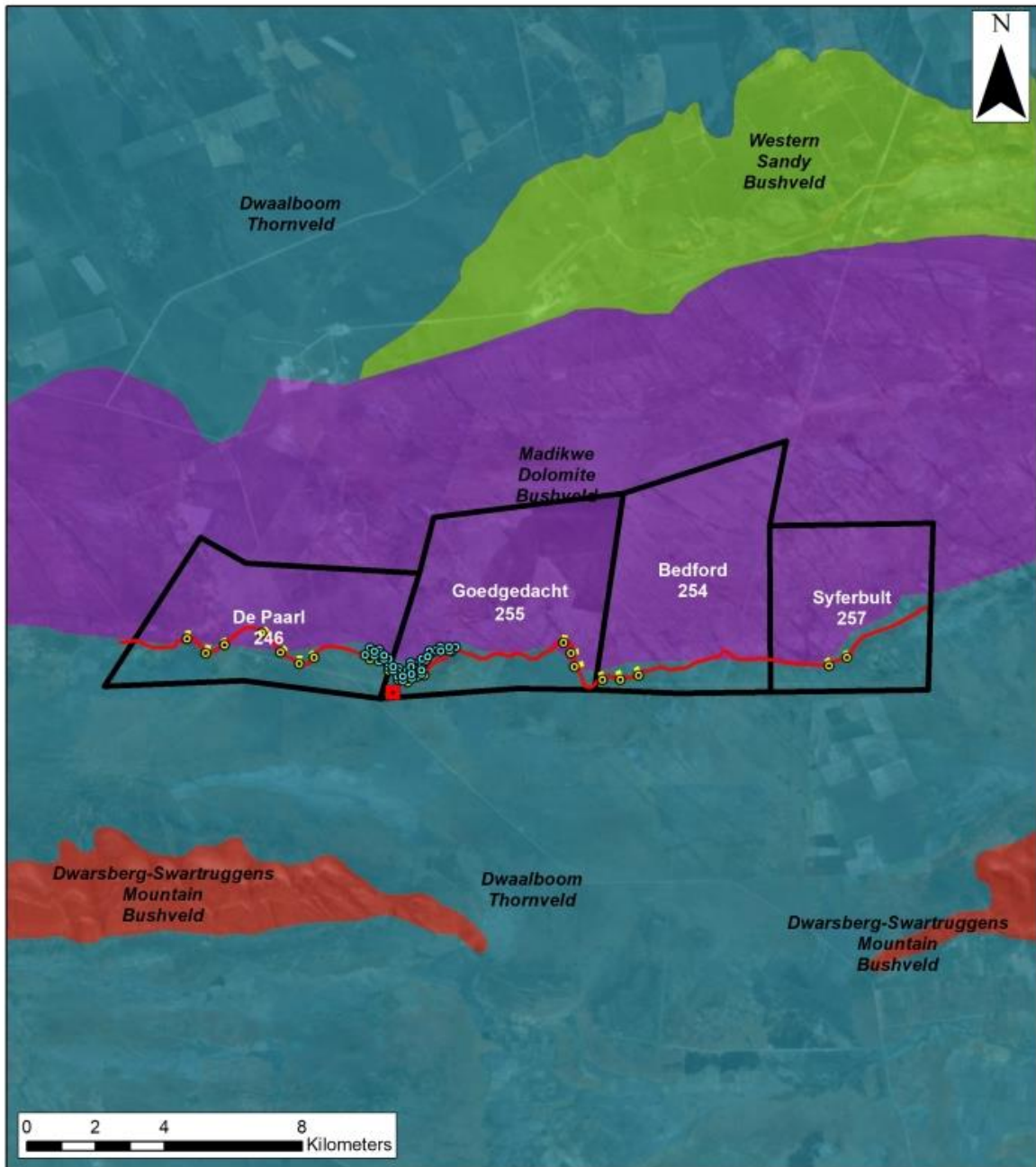
Madikwe Dolomite Bushveld

The Madikwe Dolomite Bushveld can be found on gentle ridges and low hills up to about 100-150 m above the surrounding plains. Tree and shrub layers are often not clearly distinct, especially on steeper slopes. The vegetation is dominated by deciduous trees, particularly *Combretum apiculatum* and *Kirkia wilmsii* (especially in the east). It has a continuous herbaceous layer dominated by grasses. Madikwe Dolomite Bushveld is classified as Least Concern with 17% statutorily conserved in the Madikwe Nature Reserve. Only 1% is transformed mainly as a result of cultivation and erosion is considered to be low to very low.

Dwaalboom Thornveld

The Dwaalboom Thornveld is characterized by plains with layers of scattered, low to medium high, deciduous microphyllous trees and shrubs with a few broad-leaved tree species, and an almost continuous herbaceous layer dominated by grass species. Dwaalboom Thornveld is classified as Least Concern with 6% statutorily conserved, mostly within the Madikwe Game Reserve. Approximately 14% has been transformed mainly by cultivation (mainly used for extensive cattle grazing). Erosion is generally considered to be very low to low. It must be noted that the North West Biodiversity Sector Plan (NW BSP) (2015) uses the results from an assessment of the provincial land cover by Desmet and Scaller (2015) to classify vegetation types within the province. As such, according to the NW BSP, Dwaalboom Thornveld is classified as Vulnerable.

A site visit was undertaken on the 27th of September in order to ground-truth the finding from the desktop analysis. As a result and according to the Ecological Assessment the area is mostly degraded due to overgrazing from livestock farming. As such species diversity is generally low and some alien and invasive species have spread throughout the area. Some scattered species of conservation concern such as aloes were observed (for more information please refer to the Ecological Assessment undertaken as part of the BAR).



EOH
Coastal & Environmental Services

Drawn by: Roberto Almanza
Date: October 2018
EOH CES Ref: P40700310
1:150,000

**NORTH WEST PROSPECTING
VEGETATION MAP
(MUCINA & RUTHERFORD, 2012)**

- Legend**
- Site Camp
 - Phase 1 Drill Holes
 - Phase 2 Drill Holes
 - Trench
 - Dolomite Clastics Contact
 - Project Properties
- Vegetation Type (Mucina & Rutherford, 2012)**
- Dwaalboom Thornveld
 - Dwarsberg-Swartruggens Mountain Bushveld
 - Madikwe Dolomite Bushveld
 - Western Sandy Bushveld

Datum: WGS84

Figure 14: Mucina and Rutherford vegetation classification

B. Fauna

South Africa has approximately 1,663 terrestrial vertebrate faunal species of which 850 species are birds, 343 species are mammals, 350 species are reptiles and 120 species are amphibians spread across seven biomes and 122 million km². The North West Province is home to approximately 109 reptile species, 39 amphibian species, 205 mammal species (ADU, 2018) and 549 bird species (Lepage, 2018). The study area is located within QDS 2426DC and 2426DD.

Reptiles

The North West Province has approximately 109 reptile species. The Table below illustrates the 12 of species recorded within QDS 2426DC and 2426DD within which the site is located (ADU, 2018). No SCC are likely to be found on site and all species situated with the two relevant QDSs are listed as of least concern (Bates et al. 2014).

Scientific name	Common name	Red list category
<i>Acanthocercus atricollis</i>	Southern Tree Agama	Least Concern
<i>Chamaeleo dilepis</i>	Common Flap-neck Chameleon	Least Concern
<i>Cordylus vittifer</i>	Common Girdled Lizard	Least Concern
<i>Hemidactylus mabouia</i>	Common Tropical House Gecko	Least Concern
<i>Homopholis wahlbergii</i>	Wahlberg's Velvet Gecko	Least Concern
<i>Gerrhosaurus flavigularis</i>	Yellow-throated Plated Lizard	Least Concern
<i>Mochlus sundevallii</i>	Sundevall's Writhing Skink	Least Concern
<i>Nucras intertexta</i>	Spotted Sandveld Lizard	Least Concern
<i>Psammophis subtaeniatus</i>	Western Yellow-bellied Sand Snake	Least Concern
<i>Trachylepis punctatissima</i>	Speckled Rock Skink	Least Concern
<i>Trachylepis varia sensu lato</i>	Common Variable Skink Complex	Least Concern
<i>Varanus albigularis albigularis</i>	Rock Monitor	Least Concern

(ADU, 2018)

Amphibians

Of the 39 species of amphibians known to occur in the North West Province, 15 have been recorded within QDS 2426DC and 2426DD within which the site is located (ADU, 2018) and are likely to occur in this study area. The table below lists these species together with their conservation status. One SCC (SARCA, 2014) is likely to occur within the study area (ADU, 2018). The Giant Bullfrog (*Pyxicephalus adspersus*) is listed as least concern on the IUCN red list. Based on desktop research the Giant Bull Frog occurs in habitats of seasonal shallow grassy pans, vleis and other rainfilled depressions in open flat areas of grass or savanna and for much of the year the species remains buried up to 1 m underground (du Preez & Cook, 2004). Threats include: habitat loss and illegal collection for local and international pet industries. Urbanization poses a major threat to this species as adults migrating to, and juveniles dispersing from, breeding sites are often killed on roads (du Preez & Cook, 2004).

Scientific name	Common name	Red list category
<i>Breviceps adspersus</i>	Bushveld Rain Frog	Least Concern
<i>Poyntonophrynus fenoulheti</i>	Northern Pygmy Toad	Least Concern
<i>Poyntonophrynus vertebralis</i>	Southern Pygmy Toad	Least Concern
<i>Schismaderma carens</i>	Red Toad	Least Concern
<i>Sclerophrys garmani</i>	Olive Toad	Least Concern
<i>Kassina senegalensis</i>	Bubbling Kassina	Least Concern
<i>Phrynomantis bifasciatus</i>	Banded Rubber Frog	Least Concern
<i>Phrynobatrachus natalensis</i>	Snoring Puddle Frog	Least Concern
<i>Ptychadena anchietae</i>	Plain Grass Frog	Least Concern
<i>Ptychadena mossambica</i>	Broadbanded Grass Frog	Least Concern
<i>Cacosternum boettgeri</i>	Common Caco	Least Concern
<i>Pyxicephalus adspersus</i>	Giant Bull Frog	Least Concern
<i>Pyxicephalus edulis</i>	African Bull Frog	Least Concern
<i>Tomopterna cryptotis</i>	Tremelo Sand Frog	Least Concern
<i>Chiromantis xerampelina</i>	Southern Foam Nest Frog	Least Concern

(ADU, 2018)

Mammals

205 mammal species are known to occur in the North West Province. Approximately 57 mammal species have been recorded in QDS 2426DC and 2426DD within which the site is located (ADU, 2018).

Seven SCC occur within the two relevant QDSs, they include carnivores (serval, cheetah, leopard and hyena) and antelope (grey rhebok, and roan and sable antelope). The majority of these species are unlikely to occur on site given that they are likely to be restricted to the Game Reserves/Farms nearby however they may use the area to move across or forage.

The Grey Rhebok (*Pelea capreolus*) is native to South Africa and is known to occur in agricultural and natural areas in the North West. Grey Rhebok are partial to hilly grasslands situated close to water sources (Cowell and Drouilly, 2017). Sable Antelope (*Hippotragus niger*) is a savanna/woodland ecotone species which frequents woodland open enough to support an understory of grasses in the wet season and grassland in the dry season (IUCN, 2017). Similar to Sable Antelope, Roan Antelope (*Hippotragus equines*) are associated with Savanna woodlands and grasslands and are a water-dependent grazer/browser (IUCN, 2017).

The Leopard (*Panthera pardus*) is widely distributed across Africa but has declining population numbers due to habitat fragmentation, reduced prey base, trophy hunting and conflict with livestock and game farming (Stein et al. 2016). Serval (*Leptailurus serval*) have a preference for grassland, wetland or habitats associated with water e.g. reed beds and riparian vegetation and tolerate agricultural areas provided cover is available.. Cheetah (*Acinonyx jubatus*) habitat ranges from open grasslands, woodland, arid regions and desert fringes (Durant, et al. 2015)

Scientific Name	English Name	Red List status
<i>Pelea capreolus</i>	Grey Rhebok	Near Threatened
<i>Hyaena brunnea</i>	Brown Hyena	Near Threatened
<i>Leptailurus serval</i>	Serval	Near Threatened
<i>Hippotragus niger</i>	Sable antelope	Vulnerable
<i>Acinonyx jubatus</i>	Cheetah	Vulnerable
<i>Panthera pardus</i>	Leopard	Vulnerable
<i>Hippotragus equinus</i>	Roan Antelope	Endangered

Birds

Approximately 434 bird species occur within the Bojanala District, North West Province.

17 species are of conservation concern occur in the Bojanala District of which 14 are likely to occur on site. The other three are specific to habitats that are not found on site e.g. permanent water sources.

The nearest Important Bird Area (IBA) is approximately 25-35 km away in the Pilansberg National Park and Northern Turf Thornveld. SCC dependent on the Pilansberg National Park include the Kori Bustard, Secretarybird (breeding in the park) and European Roller, as well as the regionally threatened Verreaux's Eagle (breeding in the park), Lanner Falcon, African Finfoot, African Grass Owl, Yellow-billed Stork, Marabou Stork, Yellow-throated Sandgrouse, Kurrichane Thrush, White-throated Robin-chat, White-bellied Sunbird and Kalahari Scrub Robin. SCC dependent on the Northern Turf Thornveld include the Black-winged Pratincole, Yellow-throated Sandgrouse, Lanner Falcon, Kurrichane Thrush, White-throated Robin-Chat, Burchell's Starling, White-bellied Sunbird and Kalahari Scrub Robin.

Scientific Name	English Name	Red List status	Likelihood
<i>Ardeotis kori</i>	Kori Bustard	NT	Dry open savannah woodland, dwarf shrub lands and occasionally grasslands.
<i>Calidris ferruginea</i>	Curlew Sandpiper	NT	Wetlands with muddy fringes
<i>Circus macrourus</i>	Pallid Harrier	NT	Grasslands associated with open pans or floodplains, also croplands.
<i>Falco vespertinus</i>	Red-footed Falcon	NT	Open semi-arid and arid savanna
<i>Glareola nordmanni</i>	Black-winged Pratincole	NT	A species preferring extensive open grassland, usually near wetlands. Often forages over agricultural land and pastures.
<i>Limosa limosa</i>	Black-tailed Godwit	NT	Rare/Accidental
<i>Phoeniconaias minor</i>	Lesser Flamingo	NT	Restricted to large alkaline pans and other inland water bodies.
<i>Rynchops flavirostris</i>	African Skimmer	NT	Rare/Accidental
<i>Terathopius ecaudatus</i>	Bateleur	NT	Semi-arid regions, Open and closed woodland.
<i>Anthropoides paradiseus</i>	Blue Crane	VU	Prefers open grasslands. Also forages in wetlands, pastures and agricultural land.
<i>Polemaetus bellicosus</i>	Martial Eagle	VU	Varied, from open karroid shrub to lowland savanna.
<i>Oxyura maccoa</i>	Maccoa Duck	VU	Large saline pans and shallow impoundments.
<i>Sagittarius serpentarius</i>	Secretary bird	VU	Prefers open grassland or lightly wooded habitat.
<i>Torgos tracheliotos</i>	Lappet-faced Vulture	EN	Semiarid open woodland
<i>Aquila nipalensis</i>	Steppe Eagle	EN	Favours open savannah woodland
<i>Gyps coprotheres</i>	Cape Vulture	EN	Gyps coprotheres
<i>Trigonoceps occipitalis</i>	White-headed Vulture	CE	Rare/Accidental
<i>Gyps africanus</i>	White-backed Vulture	CE	Breeds on tall, flat topped trees. Mainly restricted to large rural or game farming areas.

C. Protected areas

According to the National Environmental Management: Protected Areas (Act No 57 of 2003) the declaration of protected areas are:

- » *To protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected area;*
- » *To preserve the ecological integrity of these areas;*
- » *To conserve biodiversity in these areas;*
- » *To protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa;*
- » *To protect South Africa's threatened or rare species;*
- » *To protect an area which is vulnerable or ecologically sensitive;*
- » *To assist in ensuring the sustained supply of environmental goods and services;*
- » *To provide for the sustainable use of natural or biological resources;*
- » *To create or augment destinations for nature based tourism;*
- » *To manage the inter-relationship between natural environment biodiversity, human settlement and economic development;*
- » *Generally to contribute to human, social, cultural, spiritual and economic development;*
- » *To rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species”*

The proposed prospecting area does not fall within any formally protected areas or within any delineated National Protected Areas Expansion Strategy Focus Areas (refer to Figures 4 and 5 included above). The closest National Park to the proposed proposed site is the Marakele National Park, situated approximately 70 km north-east of the site. The closest protected areas are the Madikwe Nature Reserve (23 km west), the Pilansberg Provincial Nature Reserve (situated 25 km south) and the Atherstone Nature Reserve (situated 32 km north).

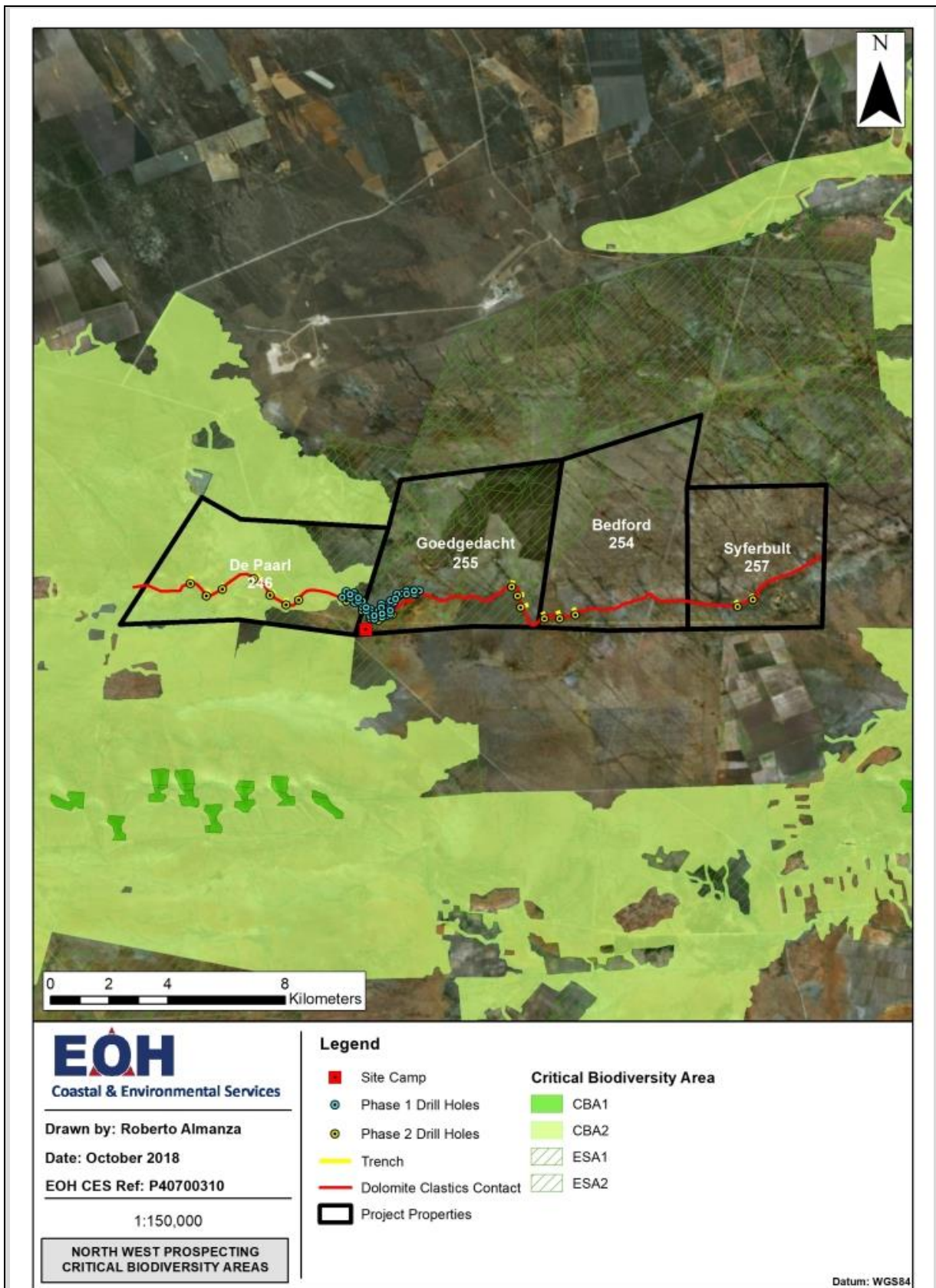


Figure 15: Critical Biodiversity Areas (CBA) and Ecological Support Areas (ESA)

According to the North West Biodiversity Sector Plan (2015) the western section of the proposed development site fall within a CBA1. It should be noted that only 8 phase 1 drill hole

and trenches and 5 phase 2 drill holes are anticipated in this area. This area could not be avoided as the mineralisation along the dolomite/shale contact in this area needs to be tested. According to the Ecological Assessment, this area has been degraded by livestock farming. Thus based on the small footprint of the drill holes and trenches and the degradation of the site, it was not deemed necessary to move these holes from an ecological perspective.

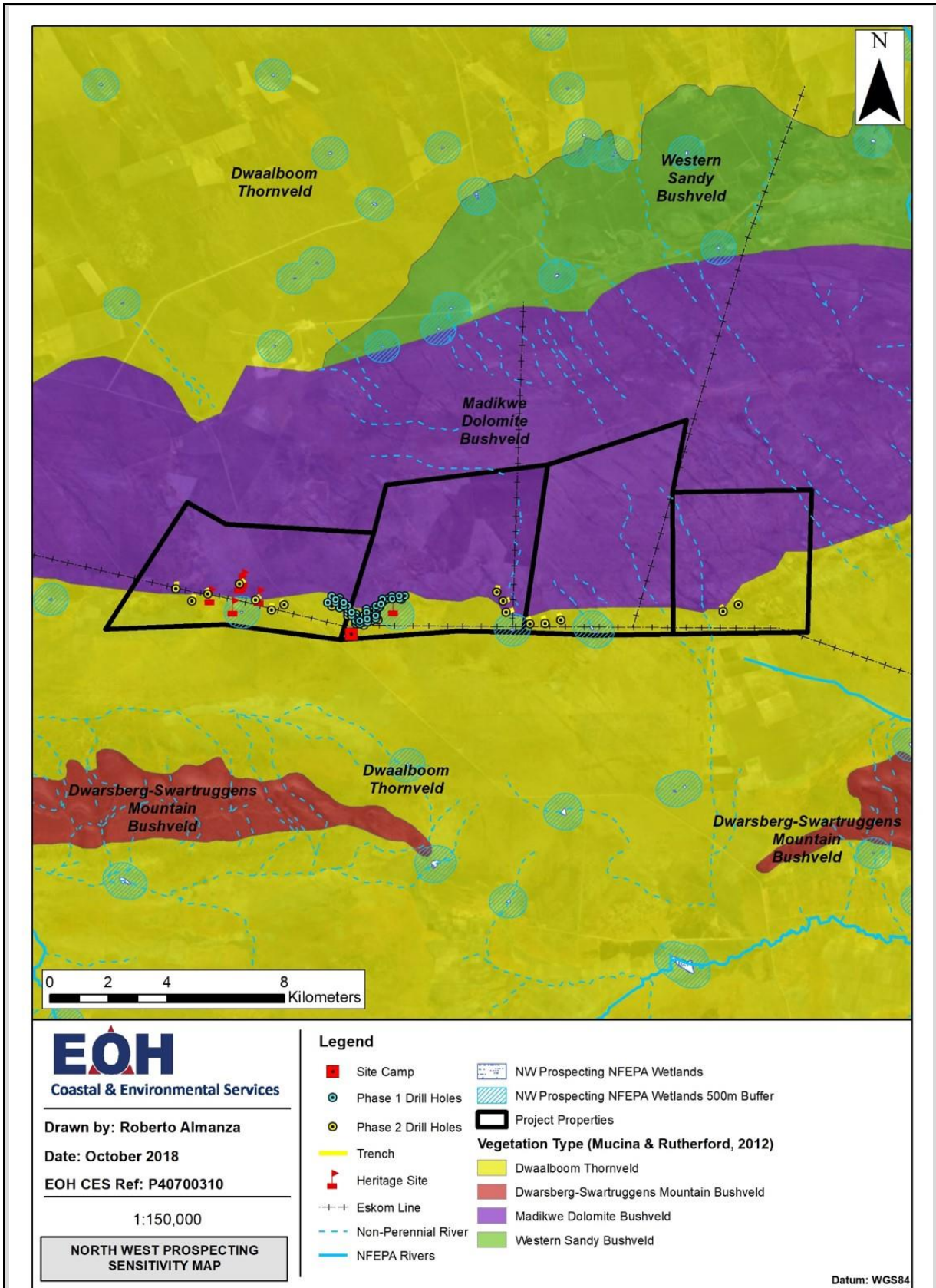


Figure 16: Sensitivity map of the area.

ARCHAEOLOGICAL AND CULTURAL HERITAGE ENVIRONMENT:

A Heritage Assessment was undertaken for the proposed development (refer to Appendix 8 for full report). Fieldwork undertaken as part of this assessment resulted in the identification of seven heritage archaeological and heritage sites. These were numbered from DWA001 to DWA007. A summary of each site is provided below:

DWA001:	Historic Black Homestead	S24.90503°; E26.76158°
DWA002:	Burial Ground	S24.90815°; E26.75350°
DWA003:	Historic to Recent Structure	S24.90065°; E26.75601°
DWA004:	Historic to Recent Structure	S24.90109°; E26.75556°
DWA005:	Historic to Recent Structure	S24.89956°; E26.75659°
DWA006:	Midden	S24.90478°; E26.74648°
DWA007:	Historic to Recent Black Homestead	S24.90810°; E26.80282°

Figure 17 included below indicates the position of these sites:

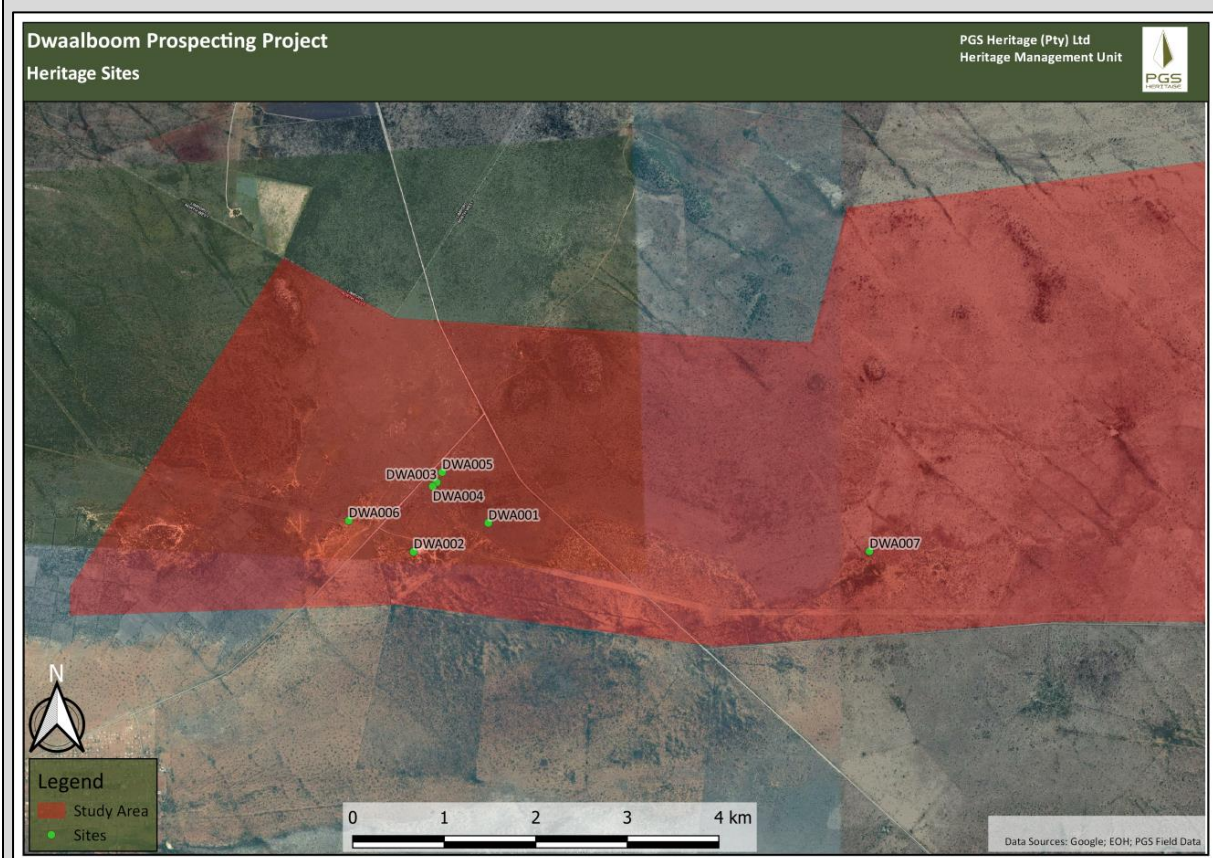


Figure 17: Position of heritage sites in relation to the project area

Please note that a 50 m buffer has been placed around all sites of heritage importance and that all drill holes and trenches have been moved outside of the buffers and thus it is not anticipated that any heritage features will be impacted by the proposed development (refer to Figure 6 included above).

In addition a Desktop Paleontological Assessment was also conducted for the proposed development. The desktop investigation indicates that the proposed study area is underlain by potentially fossil-bearing sedimentary strata (stromatolitic carbonate interbeds) of the Early Proterozoic Timeball Hill Formation (Pretoria Group, Transvaal Supergroup) that are capped by superficial deposits of low to very low palaeontological sensitivity. As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential

stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden.

(b) Description of the current land uses.

According to the North West Planning Unit (2015), landcover in the area is classified as natural landscapes. However, it should be noted that the majority of the area is under the custodianship of the Department of Rural Development and Land Reform and as such all farms, with the exception of Syferbult 257 KP, were demarcated into manageable Agricultural Lease Units and allocated to previously disadvantaged farmers in terms of short term lease agreements. Based on the site visit, there is evidence that Syferbult 257 KP is utilised for the same purpose. As a result the actual land-use of the area is considered to be agriculture. Surrounding land-uses include cultivated land, settlements (urban) and mining.

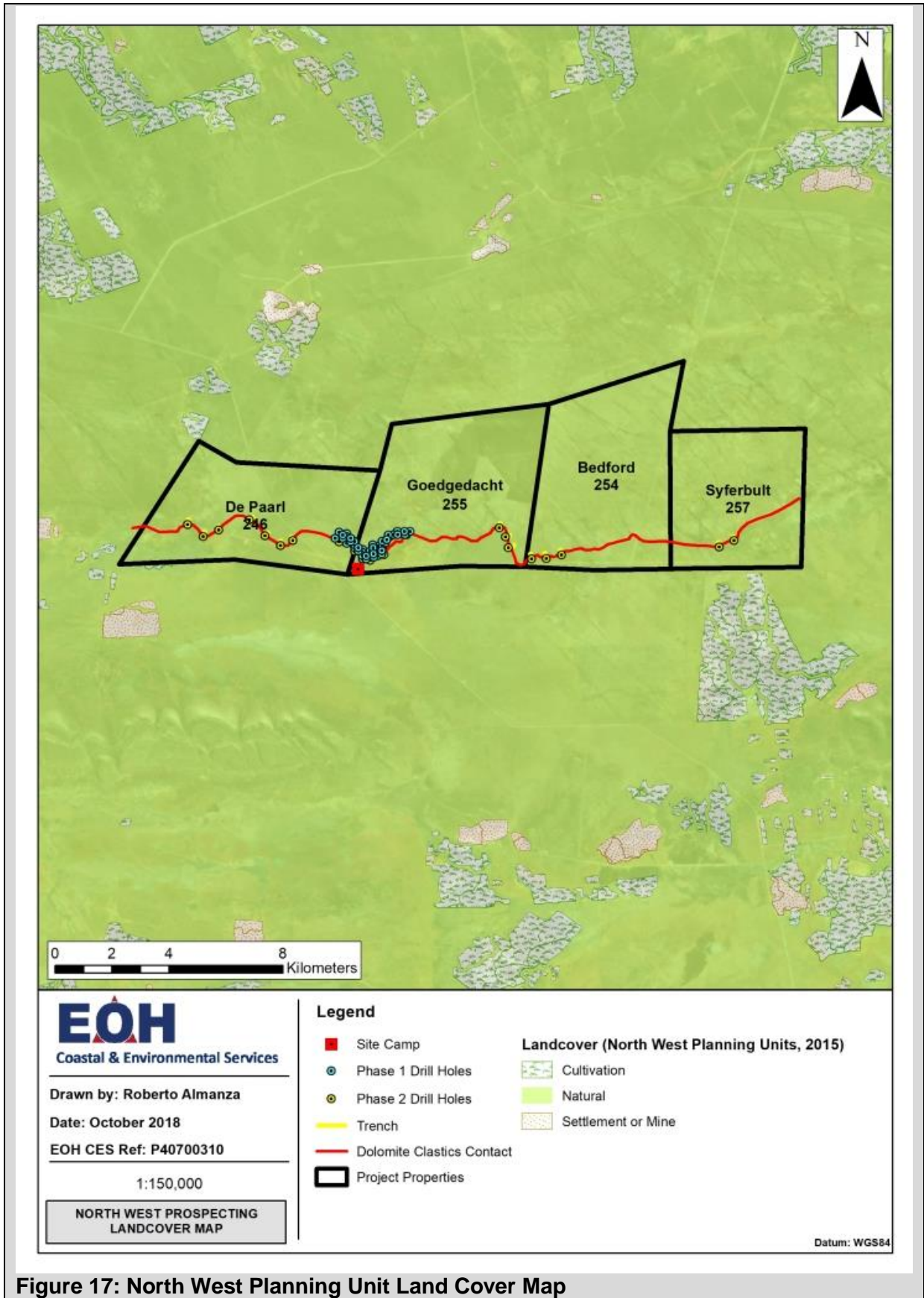


Figure 17: North West Planning Unit Land Cover Map

(c) Description of specific environmental features and infrastructure on the site.

Currently the majority of the infrastructure that exists within the affected properties is related to livestock farming practices such as grazing land, livestock pens and a watering hole (refer to pictures included below). Safe buffers will be placed around all infrastructure, these areas will be regarded as no-go areas. In addition, prospecting activities will be discussed with landowners and land occupiers and the relevant land agreements will be put in place prior to any prospecting activities being implemented.

There is an Eskom powerline that traverses the site and as such permission will have to be obtained from Eskom for drill holes in close proximity to this line. Mr Greeringh (Senior Consultant Environmental Management from Eskom) sent through the following requirements for works in or near Eskom servitudes:

1. Eskom's rights and services must be acknowledged and respected at all times;
2. Eskom shall at all times retain unobstructed access to and egress from its servitudes;
3. Eskom's consent does not relieve the developer from obtaining the necessary statutory, land owner or municipal approvals;
4. Any cost incurred by Eskom as a result of non-compliance to any relevant environmental legislation will be charged to the developer;
5. If Eskom has to incur any expenditure in order to comply with statutory clearances or other regulations as a result of the developer's activities or because of the presence of his equipment or installation within the servitude restriction area, the developer shall pay such costs to Eskom on demand;
6. The use of explosives of any type within 500 m of Eskom's services shall only occur with Eskom's previous written permission. If such permission is granted the developer must give at least 14 working days prior notice of the commencement of blasting. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued in terms of the blasting process. It is advisable to make application separately in this regard;
7. Changes in ground level may not infringe statutory ground to conductor clearances or statutory visibility clearances. After any changes in ground level, the surface shall be rehabilitated and stabilised so as to prevent erosion. The measures taken shall be to Eskom's satisfaction;
8. Eskom shall not be liable for the death or injury to any person or for the loss of or damage to any property whether as a result of the encroachment or of the use of the servitude area by the developer, his/her agent, contractors, employees, successors in title, and assignees. The developer indemnifies Eskom against loss, claims or damages including claims pertaining to consequential damages by third parties and whether as a result of damage to or interruption of or interference with Eskom's services or apparatus or otherwise. Eskom will not be held responsible for damage to the developer's equipment;
9. No mechanical equipment, including mechanical excavators or high lifting machinery, shall be used in the vicinity of Eskom's apparatus and/or services, without prior written permission having been granted by Eskom. If such permission is granted the developer must give at least seven working days' notice prior to the commencement of work. This allows time for arrangements to be made for supervision and/or precautionary instructions to be issued by the relevant Eskom Manager; Note: Where and electrical outage is required, at least fourteen work days are required to arrange it;
10. Eskom's rights and duties in the servitude shall be accepted as having prior right at all times and shall not be obstructed or interfered with.
11. Under no circumstances shall rubble, earth or other material be dumped within the servitude restriction area. The developer shall maintain the area concerned to Eskom's satisfaction. The developer shall be liable to Eskom for the cost of any remedial action which has to be carried out by Eskom.
12. The clearances between Eskom's live electrical equipment and the proposed construction work shall be observed as stipulated by Regulation 15 of the Electrical

Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

13. Equipment shall be regarded electrically live and therefore dangerous at all times.
14. In spite of the restrictions stipulated by Regulation 15 of the Electrical Machinery Regulations of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), as an additional safety precaution, Eskom will not approve the erection of houses, or structures occupied or frequented by human beings, under the power lines or within the servitude restriction area.
15. Eskom may stipulate any additional requirements to highlight any possible exposure to Customers or Public to coming into contact or be exposed to any dangers of Eskom plant.
16. It is required of the developer to familiarise himself with all safety hazards related to Electrical plant.
17. Any third party servitudes encroaching on Eskom servitudes shall be registered against Eskom's title deed at the developer's own cost. If such a servitude is brought into being, its existence should be endorsed on the Eskom servitude deed concerned, while the third party's servitude deed must also include the rights of the affected Eskom servitude.

All requirements as set out above will be adhered to at all times and the necessary permission will be obtained prior to any drilling or trenching being undertaken.



Plate 1: Livestock pen in the prospecting area



Plate 2: Eskom servitude traversing the site



Figure 16: Drill and trench sites in proximity to the Eskom Servitude

(d) Environmental and current land use map.

Refer to Figures 1-16 indicating land uses and environmental features within the proposed prospecting area. It should be noted that while the whole of the prospecting right application area of 10,036 ha are depicted on the maps, only 1.65 ha (0.016%) of the total area will be disturbed as a result of invasive prospecting activities (drilling and trenching).

Taking the environmental constraints into consideration (wetlands, drainage lines, rivers, CBAs, heritage sites, etc.), the preliminary layout has been designed in such a manner to avoid these sensitive areas as far as is practically possible.

V. Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be mitigated or reversed

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

The impact section has been divided into 2 tables. Table 1 identifies and lists the various anticipated impacts, while Table 2 provides details on the rating of these impacts in terms the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be mitigated or reversed.

Table 1: List of identified impacts and proposed mitigations measures.

POTENTIAL IMPACTS	MITIGATION MEASURES
CONSTRUCTION PHASE: ERECTION OF THE CAMP SITE (NO OTHER PHYSICAL INFRASTRUCTURE SUCH AS ROADS ARE ANTICIPATED FOR THE PROPOSED PROSPECTING ACTIVITIES)	
Fauna and Flora – Loss of natural bush and/or Thornveld	<ul style="list-style-type: none"> • The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint. • Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible. • The contractor/applicant must monitor vegetation clearing on site. •
Fauna and Flora – Loss of Species of Conservation Concern	<ul style="list-style-type: none"> • The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough. • The prospecting footprint must avoid identified floral SCC as much as practically possible. • Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction. • The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly.
Fauna and Flora – Loss of Aquatic Habitat	<ul style="list-style-type: none"> • Aquatic features identified on site must be avoided. • The contractor and staff must be made aware of these “No-Go” areas. • The contractor/applicant must monitor for encroachment within these areas.
Fauna and Flora – Control of Alien Plant Species	<ul style="list-style-type: none"> • The Alien Vegetation Rehabilitation and Management Plan must be implemented. • The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly.
Fauna and Flora – Rehabilitation of disturbed areas	<ul style="list-style-type: none"> • All temporarily impacted areas must be rehabilitated back to their original condition. • Only topsoil from the immediate area must be used for rehabilitation. • All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan.
Air Quality - Dust creation due to vegetation clearance	<ul style="list-style-type: none"> • Dust abatement by wetting down areas exposed as a result of the construction of the site camp.

<p>Surface and Groundwater Pollution – A number of activities associated with the construction phase, such as generation of waste, washing of vehicles and ablutions, are associated with potential contaminants.</p>	<ul style="list-style-type: none"> • Oils and fuel must be stored in areas with an impermeable surface to avoid spillages. • Vehicle repairs, servicing and washing must be done off-site. • Where it is necessary to service or repair a vehicle or item of plant in the field drip trays / plastic tarps must be used to catch drips, spills and leaks. • Spill kits must be available on-site, and spills must be cleaned up immediately in accordance with an established protocol appropriate to the material in question. • An emergency plan for spillages must be in place. • Stockpiles should not be higher than the 2 m height restriction. • Keep equipment and vehicles within the limits of the already disturbed areas, where possible. • Rehabilitation of the affected landscape must commence as soon as possible once the site camp is no longer required.
<p>Environmental training</p>	<ul style="list-style-type: none"> • All site personnel should have a basic level of environmental awareness training. Topics covered should include; <ul style="list-style-type: none"> ○ What is meant by “Environment” ○ Why the environment needs to be protected and conserved ○ How construction activities can impact on the environment ○ What can be done to mitigate against such impacts ○ Awareness of emergency and spills response provisions ○ Social responsibility during construction of the camp site e.g. being considerate to local residents ○ The need for a “clean site” policy also needs to be explained to the workers.
<p>Noise Pollution – Mainly as a result of vehicle movements on site</p>	<ul style="list-style-type: none"> • All work should be limited to daylight hours, i.e. between 6am and 6pm, unless otherwise agreed upon with landowners.
<p>Waste pollution – Domestic waste produced by workers</p>	<ul style="list-style-type: none"> • Scavenger proof bins must be made available to avoid windblown litter. • Bins should be emptied on a regular basis. • Domestic waste must be removed from site - no burying or burning of domestic waste must be allowed. • Enviro-loo ablution facilities should be serviced regularly.
<p>Soils – Soil erosion and pollution due to exposed areas not being managed, leaks or spillages from ablution facilities</p>	<ul style="list-style-type: none"> • Oils and fuel must only be stored in areas with an impermeable surface to avoid spillages. • Any spillages which may occur should be investigated and immediate action must be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, this must be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil must be excavated and disposed at a suitably licensed and registered landfill. • Stormwater runoff in and around the camp site should be controlled. • Equipment and vehicles should be kept within the limits of the already disturbed areas, where possible. • Erosion control measures (i.e. silt fences) should be applied in areas that have high risk for erosion.
<p>Fire Prevention</p>	<ul style="list-style-type: none"> • The Drilling Contractor must have fire-fighting equipment available on site at all times. The level of firefighting

	<p>equipment must be assessed and evaluated through a typical risk assessment process.</p> <ul style="list-style-type: none"> • No fires must be permitted on site. Cooking must only be allowed on gas-stoves at designated areas.
Erosion	<ul style="list-style-type: none"> • Wind screening and stormwater control should be undertaken to prevent soil loss from the site. • All erosion control mechanisms should be regularly maintained. • Re-vegetation of disturbed surfaces must occur immediately after the construction and prospecting activities have been completed. • Rehabilitation should be undertaken progressively
Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles	<ul style="list-style-type: none"> • Visual impacts will be of a temporary nature and unfortunately cannot be mitigated.
Cultural and Heritage Artefacts (Including Paleontology)	<ul style="list-style-type: none"> • Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA must be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA must be followed. • The Contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. • Any discovered artefacts must not be removed under any circumstances. Any damage to or destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted. • Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6) • Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences. • This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken. • As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden.

<p>Livestock – due to disturbance by noise and vibration from vehicle traffic.</p>	<ul style="list-style-type: none"> • Landowners and Land occupiers should be informed of the planned dates of construction activities. • Site activities should be restricted to daylight hours between 6am and 6pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon. • The camp site must not be constructed within 100 m of livestock pens, or any wetlands and drainage lines and their regulatory buffers.
<p>PROSPECTING (OPERATIONAL) PHASE: DRILLING AND TRENCHING</p>	
<p>Environmental training</p>	<ul style="list-style-type: none"> • All site personnel should have a basic level of environmental awareness training. Topics covered should include; <ul style="list-style-type: none"> ○ What is meant by “Environment” ○ Why the environment needs to be protected and conserved ○ How construction activities can impact on the environment ○ What can be done to mitigate against such impacts ○ Awareness of emergency and spills response provisions ○ Social responsibility during construction of the camp site e.g. being considerate to local residents • The need for a “clean site” policy also needs to be explained to the workers.
<p>Air quality – dust creation due to vehicle movement, drilling and bulk sampling</p>	<ul style="list-style-type: none"> • Dust abatement by wetting down exposed areas, at drill sites and trenches, when necessary. • Vehicles should stay on the approved or available tracks as far as practically possible. • Low speed limits must be set to avoid the creation of dust ($\leq 40\text{km/hr}$). • All the equipment and vehicles should be equipped with the manufacturers’ stock standard exhaust systems which will minimise the amount of emissions from their engines. • No burning of waste must be allowed on site. • Fire extinguishers and other fire safety equipment must be available on site. • Drilling and trenching locations, as set out by the final layout plan and as discussed with the relevant landowners and/or land occupiers must be adhered to. • Excavations and other clearing activities must only be done during agreed upon working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas. • Any complaints or claims emanating from the lack of dust control must be attended to immediately by the Project Geologist and Drilling Contractor. • All areas must be rehabilitated immediately upon completion of work conducted.
<p>Noise pollution – vehicle movement, use of drill rigs and excavation machinery</p>	<ul style="list-style-type: none"> • The activities must comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislations and local by-laws regarding noise control. • Employees should be supplied with ear plugs, when necessary. All prospecting vehicles should be maintained in a road worthy condition. • All work must be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners.
<p>Waste pollution – domestic waste produced by workers</p>	<ul style="list-style-type: none"> • Scavenger proof bins should be made available to avoid windblown litter.

	<ul style="list-style-type: none"> • Bins should be emptied on a regular basis. • Domestic waste must be removed from site - no burying or burning of domestic waste must be allowed. • Enviro-loo ablution facilities should be regularly serviced.
<p>Water pollution (Surface and groundwater, wetlands and water bodies) – due to possible spillages, leaks from vehicles or ablution facilities</p>	<ul style="list-style-type: none"> • Prospecting activities must not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands. • Enviro-loo ablution facilities must not be placed within 100 m of any water body. <p>Hazardous materials</p> <ul style="list-style-type: none"> • All storage tanks (if any) containing hazardous materials must be placed in bunded containment areas with sealed surfaces. • The bund wall must be high enough to contain 110% of the total volume of the stored hazardous material with an additional allocation for potential high runoff stormwater events. • Any hazardous substances must be stored at least 100 m from any of the water bodies on site. • Contaminated wastewater should be managed by the Contractor to ensure existing water resources on the site are not contaminated. • An emergency plan for spillages must be in place.
<p>Soils – soil erosion and pollution due to exposed areas not being managed, leaks or spillages from ablution facilities</p>	<ul style="list-style-type: none"> • Dust abatement by wetting down exposed areas, at drill sites and trenches, when necessary. • Stockpiles must not be higher than the 2 m height restriction. • Drip trays should be used under drilling and excavation equipment to ensure no spillage of oils and fuels onto the ground surface. • Oils and fuel must be stored in areas with an impermeable surface to avoid spillages. • Any spillages which may occur should be investigated and immediate action must be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, these must be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil must be excavated and disposed at a suitably licensed and registered landfill. • Stormwater runoff in and around drill holes and trenches should be controlled. • Equipment and vehicles should be kept within the limits of the already disturbed areas, if at all possible. • Erosion control measures (i.e. silt fences) should be applied in areas which have high risk for erosion.
<p>Fauna and Flora – Loss of natural bush and/or Thornveld</p>	<ul style="list-style-type: none"> • The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint. • Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible. • The contractor/applicant must monitor vegetation clearing on site. •
<p>Fauna and Flora – Loss of Species of Conservation Concern</p>	<ul style="list-style-type: none"> • The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough.

	<ul style="list-style-type: none"> • The prospecting footprint must avoid identified floral SCC as much as practically possible. • Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction. • The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly.
Fauna and Flora – Loss of Aquatic Habitat	<ul style="list-style-type: none"> • Aquatic features identified on site must be avoided. • The contractor and staff must be made aware of these “No-Go” areas. • The contractor/applicant must monitor for encroachment within these areas.
Fauna and Flora – Control of Alien Plant Species	<ul style="list-style-type: none"> • The Alien Vegetation Rehabilitation and Management Plan must be implemented. • The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly.
Fauna and Flora – Rehabilitation of disturbed areas	<ul style="list-style-type: none"> • All temporarily impacted areas must be rehabilitated back to their original condition. • Only topsoil from the immediate area must be used for rehabilitation. • All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan.
Fire Prevention	<ul style="list-style-type: none"> • The Drilling Contractor must have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process. • No fires must be permitted on site. Cooking should only be allowed on gas-stoves at designated areas.
Erosion	<ul style="list-style-type: none"> • Wind screening and stormwater control should be undertaken to prevent soil loss from the site. • All erosion control mechanisms should be regularly maintained. • Re-vegetation of disturbed surfaces must occur immediately after the prospecting activities are completed. • Rehabilitation should be undertaken progressively
Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles	<ul style="list-style-type: none"> • Visual impacts will be of a temporary nature and unfortunately cannot be mitigated.
Cultural and Heritage Artefacts (including Palaeontology)	<ul style="list-style-type: none"> • Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA must be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA will be followed. • The contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. • Any discovered artefacts must not be removed under any circumstances. Any destruction of a site must only be allowed once a permit is obtained and the site has been mapped and noted. • Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear

	<p>between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6)</p> <ul style="list-style-type: none"> • Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences. • This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken. • <i>As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in <u>once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden.</u></i>
<p>Livestock – due to disturbance by noise and vibration from vehicle traffic and drilling and excavation activities.</p>	<ul style="list-style-type: none"> • Landowners and/or land occupiers must be informed of the planned dates of the prospecting activities. • Site activities must be restricted to daylight hours between 6 am and 6 pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon. • Drilling and trenching must not take place within 100 m of livestock pens or any wetlands and drainage lines and their regulatory buffers.
<p>DECOMMISSIONING/ REHABILITATION PHASE</p>	
<p>Fauna and Flora – Control of Alien Plant Species</p>	<ul style="list-style-type: none"> • The Alien Vegetation Rehabilitation and Management Plan must be implemented. • The contractor/applicant must ensure adequate effort has been taken to reduce the spread of alien invasive species at closure. •
<p>Fauna and Flora – Rehabilitation of disturbed areas</p>	<ul style="list-style-type: none"> • All temporarily impacted areas must be rehabilitated back to their original condition. • Only topsoil from the immediate area must be used for rehabilitation. • All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan. • A suitably qualified individual/botanist should conduct a closure audit to ensure rehabilitation has been undertaken in a satisfactory manner.
<p>Land degradation – due to improper site clean-up</p>	<ul style="list-style-type: none"> • All waste bins and domestic waste must be removed from site once the activity is complete. • Excess topsoil, not used in rehabilitation, must be levelled. • All temporary and sampling equipment (i.e. waste bins, Enviro-loo ablution facilities, sample bags etc.) used during prospecting and rehabilitation must be removed from site. • The site should be cleared of all litter. • A final inspection must be undertaken, in order to ensure adherence to EMPr guidelines, with regards to the

	completion of localized / remaining areas of impact, monitoring of rehabilitation success, etc.
--	---

Table 2: Potential social related impacts and mitigation measures

POTENTIAL IMPACTS	MITIGATION MEASURES
SOCIO-ECONOMIC	
Increase Traffic - During prospecting 4x4 vehicles will be utilising the existing road network. This may result in damage to the existing roads and tracks.	<ul style="list-style-type: none"> • Speed limits must not exceed 40km/h on farm roads and tracks. • All drivers should be made aware of the procedures to be followed if an accident occurs.
Nuisance (Air and Noise) - Impacts on air quality will primarily result from increased dust levels associated with the required drilling and trenching activities and associated traffic on farm roads. It is anticipated that there will be an increase in noise levels during prospecting which will be associated with the operation of vehicles and sampling equipment.	<ul style="list-style-type: none"> • The activities must comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable noise regulations and local by-laws regarding noise control. • All prospecting vehicles should be maintained in a road worthy condition. • All work must be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners and/or land occupiers. • Vehicles should stay on existing / approved tracks / roads, as far as practically possible. • Low speed limits must be set on access roads to avoid the creation of dust ($\leq 40\text{km/hr}$). • All the equipment and vehicles should be equipped with the manufacturers' stock standard exhaust systems which should minimise the amount of emissions from their engines. • No burning of waste must be allowed on site. • Any complaints or claims emanating from the lack of dust control should be attended to immediately by the Project Geologist, Site manager and or ESO/ECO. • All areas must be rehabilitated immediately upon completion of work conducted.
Water pollution (Surface and groundwater sources, wetlands and drainage lines) – due to possible spillages and/or leaks from vehicles or temporary ablution facilities (i.e. enviro-loo)	<ul style="list-style-type: none"> • Enviro-loo ablution facilities must not be placed within 100 m of any water body. • Prospecting activities must not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands. • Oils and fuel must be stored in areas with an impermeable surface to avoid spillages. • Vehicle repairs, servicing and washing must be done off-site, as far as practically possible. • Where it is necessary to service or repair a vehicle or item of plant in the field drip trays / plastic tarps must be used to catch drips, spills and leaks. • Spill kits must be available on-site, and spills must be cleaned up immediately in accordance with an established protocol appropriate to the material in question. • An emergency plan for spillages must be in place.
Visual Impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles.	<ul style="list-style-type: none"> • Visual impacts will be of a temporary nature and unfortunately cannot be mitigated.
Economic - According to the Integrated Development Plan (IDP)	<ul style="list-style-type: none"> • Local labour and service companies should be used where possible.

POTENTIAL IMPACTS	MITIGATION MEASURES
<p>of the local municipality the unemployment rate is currently at 51%. Many 'poverty gaps' exist, with settlements in the nearby towns. Therefore, depending on the number of employment opportunities to be created, the project could have a positive impact in terms of employment.</p>	<ul style="list-style-type: none">• Prospecting Rights do not supersede property rights hence the applicant must comply with all reasonable requirements to minimize the impact of prospecting on landowners, land occupiers and agricultural activities.

Table 3: Significance statements and rating of the identified biophysical impacts, before and after mitigation.

POTENTIAL IMPACTS	SIGNIFICANCE RATING BEFORE MITIGATION	SIGNIFICANCE RATING WITH MITIGATION
CONSTRUCTION PHASE		
Environmental Training	Extent: Site Duration: Permanent – Long Term Intensity: Low Probability: May Occur Significance: Low Positive Degree of confidence: High Reversibility: N/A	Extent: Site Duration: Permanent – Long Term Intensity: Low Probability: Definite Significance: Moderate Positive Degree of confidence: High Reversibility: N/A
Fauna and Flora – Loss of bush / Thornveld	Extent: Site Duration: Short-term Intensity: High Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Loss of Species of Conservation Concern	Extent: Localised Duration: Long-term Intensity: High Probability: Possible Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Localised Duration: Long-term Intensity: Low Probability: May Occur Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Loss of Aquatic Habitat	Extent: Localised Duration: Short-term Intensity: Moderate Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Localised Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Control of Alien Plant Species	Extent: Site Duration: Short-term Intensity: Moderate Probability: Possible Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: May Occur Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Rehabilitation of disturbed areas	Extent: Site Duration: Short-term Intensity: Moderate Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Air Quality - Dust creation due to vegetation clearance	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate	Extent: Site Duration: Short-term Intensity: Low Probability: Probable Significance: Low

	Degree of confidence: High Reversibility: Easily Achievable	Degree of confidence: High Reversibility: Easily Achievable
Surface and Groundwater Pollution – A number of activities associated with the construction phase, such as generation of waste, washing of vehicles and ablutions, are associated with potential contaminants.	Extent: Local Duration: Medium-term Intensity: Low Probability: Probable Significance: Moderate Degree of confidence: High Reversibility: Difficult	Extent: Local Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Difficult
Noise Pollution – Mainly as a result of vehicle movements on site	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Waste pollution – Domestic waste produced by workers	Extent: Local Duration: Medium-term Intensity: Low Probability: Probable Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Soils – Soil erosion and pollution due to exposed areas not being managed, leaks or spillages from ablution facilities	Extent: Local Duration: Medium-term Intensity: Negligible Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Negligible Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fire Prevention	Extent: Site Duration: Medium-term Intensity: Low Probability: May Occur Significance: Low Positive Degree of confidence: High Reversibility: N/A	Extent: Site Duration: Medium-term Intensity: Low Probability: Definite Significance: Moderate Positive Degree of confidence: High Reversibility: N/A
Erosion	Extent: Local Duration: Medium-term Intensity: Negligible Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Negligible Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable
Cultural and Heritage Artefacts (Including Palaeontology)	Extent: Regional Duration: Permanent	Extent: Site Duration: Short-term

	Intensity: Moderate Probability: May Occur Significance: Moderate Degree of confidence: High Reversibility: Difficult	Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Livestock – due to disturbance by noise and vibration from vehicle traffic.	Extent: Site Duration: Medium-term Intensity: Low Probability: May occur Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Medium-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
PROSPECTING PHASE – DRILLING AND TRENCHING		
Environmental training	Extent: Site Duration: Permanent – Long Term Intensity: Low Probability: May Occur Significance: Low Positive Degree of confidence: High Reversibility: N/A	Extent: Site Duration: Permanent – Long Term Intensity: Low Probability: Definite Significance: Moderate Positive Degree of confidence: High Reversibility: N/A
Air quality – dust creation due to vehicle movement, drilling and bulk sampling	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Noise pollution – vehicle movement, use of drill rigs and excavation machinery	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Waste pollution – domestic waste produced by workers	Extent: Local Duration: Medium-term Intensity: Low Probability: Probable Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Water pollution (Surface and groundwater, wetlands and water bodies) – due to possible spillages, leaks from vehicles or ablution facilities	Extent: Local Duration: Medium-term Intensity: Low Probability: Probable Significance: Moderate Degree of confidence: High Reversibility: Difficult	Extent: Local Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Difficult
Soils – soil erosion and pollution due to exposed areas not being managed, leaks or spillages from ablution facilities	Extent: Local Duration: Medium-term Intensity: Negligible Probability: Probable Significance: Low	Extent: Local Duration: Short-term Intensity: Negligible Probability: Unlikely Significance: Low

	Degree of confidence: High Reversibility: Easily Achievable	Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Loss of bush / Thornveld	Extent: Site Duration: Short-term Intensity: High Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Loss of Species of Conservation Concern	Extent: Localised Duration: Long-term Intensity: High Probability: Possible Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Localised Duration: Long-term Intensity: Low Probability: May Occur Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Loss of Aquatic Habitat	Extent: Localised Duration: Short-term Intensity: Moderate Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Localised Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Control of Alien Plant Species	Extent: Site Duration: Short-term Intensity: Moderate Probability: Possible Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: May Occur Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Rehabilitation of disturbed areas	Extent: Site Duration: Short-term Intensity: Moderate Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fire Prevention	Extent: Site Duration: Medium-term Intensity: Low Probability: May Occur Significance: Low Positive Degree of confidence: High Reversibility: N/A	Extent: Site Duration: Medium-term Intensity: Low Probability: Definite Significance: Moderate Positive Degree of confidence: High Reversibility: N/A
Erosion	Extent: Local Duration: Medium-term Intensity: Negligible Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Negligible Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable

Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable
Cultural and Heritage Artefacts (including Palaeontology)	Extent: Regional Duration: Permanent Intensity: Moderate Probability: May Occur Significance: Moderate Degree of confidence: High Reversibility: Difficult	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Livestock – due to disturbance by noise and vibration from vehicle traffic and drilling and excavation activities.	Extent: Site Duration: Medium-term Intensity: Low Probability: May occur Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Medium-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Easily Achievable
DECOMMISSIONING/ REHABILITATION PHASE		
Fauna and Flora – Control of alien plant species	Extent: Site Duration: Medium-term Intensity: Medium Probability: Possible Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: May occur Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Fauna and Flora – Rehabilitation of disturbed areas	Extent: Site Duration: Medium-term Intensity: Medium Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Land degradation – due to improper site clean-up	Extent: Local Duration: Short-term Intensity: Low Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: May occur Significance: Low Degree of confidence: High Reversibility: Easily Achievable

Table 4: Significance statements and rating of the identified cultural/heritage and socio-economic impacts, before and after mitigation

POTENTIAL IMPACTS	SIGNIFICANCE RATING BEFORE MITIGATION	SIGNIFICANCE RATING WITH MITIGATION
SOCIO-ECONOMIC		
Increase Traffic - During prospecting 4x4 vehicles will be utilising the existing road network. This may result in	Extent: Local Duration: Short-term Intensity: Low Probability: Probable	Extent: Local Duration: Short-term Intensity: Low Probability: May occur

damage to the existing roads and tracks.	Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Nuisance (Air and Noise) - Impacts on air quality will primarily result from increased dust levels associated with the required drilling and trenching activities and associated traffic on farm roads. It is anticipated that there will be an increase in noise levels during prospecting which will be associated with the operation of vehicles and sampling equipment.	Extent: Local Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Low Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Water pollution (Surface and groundwater sources, wetlands and drainage lines) – due to possible spillages and/or leaks from vehicles or temporary ablution facilities (i.e. enviro-loo)	Extent: Local Duration: Medium-term Intensity: Low Probability: Probable Significance: Moderate Degree of confidence: High Reversibility: Difficult	Extent: Local Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Difficult
Visual Impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles.	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable
Economic - According to the Integrated Development Plan (IDP) of the local municipality the unemployment rate is currently at 51%. Many 'poverty gaps' exist, with settlements in the nearby towns. Therefore, depending on the number of employment opportunities to be created, the project could have a positive impact in terms of employment.	Extent: Site Duration: Medium-term Intensity: Low Probability: May Occur Significance: Low Positive Degree of confidence: High Reversibility: N/A	Extent: Site Duration: Medium-term Intensity: Low Probability: Definite Significance: Moderate Positive Degree of confidence: High Reversibility: N/A

As far as we are aware there are no other prospecting or mining activities in close proximity to the proposed site. There is however another prospecting right for different mineral commodities, held by Thatong Development Consulting CC on the same properties. In the unlikely event that prospecting activities coincide, cumulative impacts such as the vegetation clearance, air quality (particularly dust and vehicle emissions) and noise (from traffic and mining / prospecting equipment), are likely. However, the scale of prospecting is extremely small, e.g. 1.65 ha of vegetation will need to be cleared over an area of 10,036 ha (for this application). For this reason any cumulative impacts resulting from prospecting will be negligible.

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

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

EOH CES has developed a revised rating scale in accordance with the requirements outlined in the amended EIA Regulations (2017). This scale takes into consideration the following variables:

- Significance
- Consequence
- Extent
- Duration
- Probability
- Reversibility and Mitigation

IMPACT IDENTIFICATION MATRIX

Six factors are considered when assessing the significance of the identified issues, namely:

1. **Significance** - Each of the below criterion (points 2-6 below) are ranked with scores assigned, as presented in Table 5 to determine the overall significance of an activity. The total scores recorded for the effect (which includes scores for duration; extent; consequence and probability) and reversibility / mitigation are then read off the matrix presented in Table 6, to determine the overall significance of the issue. The overall significance is either negative or positive (Table 7).
2. **Consequence** - the consequence scale is used in order to objectively evaluate how severe a number of negative impacts might be on the issue under consideration, or how beneficial a number of positive impacts might be on the issue under consideration.
3. **Extent** - the spatial scale defines the physical extent of the impact.
4. **Duration** - the temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact.
5. The **probability** of the impact occurring - the likelihood of impacts taking place as a result of project actions arising from the various alternatives. There is no doubt that some impacts would occur (e.g. loss of vegetation), but other impacts are not as likely to occur (e.g. vehicle accident), and may or may not result from the proposed development and alternatives. Although some impacts may have a severe effect, the likelihood of them occurring may affect their overall significance.
6. **Reversibility / Mitigation** – The degree of difficulty of reversing and/or mitigating the various impacts ranges from very difficult to easily achievable. The four categories used are listed and explained in Table 5 below. Both the practical feasibility of the measure, the potential cost and the potential effectiveness is taken into consideration when determining the appropriate degree of difficulty.

The relationship of the issue to the temporal scale, spatial scale and the severity are combined to describe the overall importance rating, namely the significance of the assessed impact.

The impact is first classified as a positive (+) or negative (-) impact. The impact then undergoes an evaluation according to a set of criteria.

Table 5: Ranking of Evaluation Criteria.

EFFECT	Duration	
	Short term	Less than 5 years
	Medium term	Between 5-20 years
	Long term	More than 20 years
	Extent	
	Localised	The proposed site and its immediate environs
	Moderate	District / Municipal and Provincial level
	Extensive	National and International level
	Consequence	
	Slight	Slight impacts or benefits on the affected system(s) or party(ies)
	Moderate	Moderate impacts or benefits on the affected system(s) or party(ies)
	Severe/ Beneficial	Severe impacts or benefits on the affected system(s) or party(ies)
	Probability	
Unlikely	The likelihood of these impacts occurring is slight (low probability)	
May Occur	The likelihood of these impacts occurring is possible (high probability)	
Definite	The likelihood is that this impact will definitely occur	
REVERSIBILITY/ MITIGATION	Reversibility / Mitigation	
	Easily achievable	The impact can be easily, effectively and cost effectively mitigated/reversed
	Achievable	The impact can be effectively mitigated/reversed without much difficulty or cost
	Difficult	The impact could be mitigated/reversed but there will be some difficulty in ensuring effectiveness and/or implementation, and significant costs
	Very Difficult	The impact could be mitigated/reversed but it would be very difficult to ensure effectiveness, technically very challenging and financially very costly

** In certain cases it may not be possible to determine the severity of an impact thus it may be determined: Don't know/Can't know*

Table 6: Impact Severity Rating

Impact severity (<i>The severity of negative impacts, or how beneficial positive impacts would be on a particular affected system or affected party</i>)	
Very severe	Very beneficial
An irreversible and permanent change to the affected system(s) or party(ies) which cannot be mitigated. For example the permanent loss of land.	A permanent and very substantial benefit to the affected system(s) or party(ies), with no real alternative to achieving this benefit. For example the vast improvement of sewage effluent quality.
Severe	Beneficial
Long term impacts on the affected system(s) or party(ies) that could be mitigated. However, this mitigation would be difficult, expensive or time consuming, or some combination of these. For example, the clearing of forest vegetation.	A long term impact and substantial benefit to the affected system(s) or party(ies). Alternative ways of achieving this benefit would be difficult, expensive or time consuming, or some combination of these. For example an increase in the local economy.
Moderately severe	Moderately beneficial
Medium to long term impacts on the affected system(s) or party (ies), which could be mitigated. For example constructing a sewage treatment facility where there was vegetation with a low conservation value.	A medium to long term impact of real benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are equally difficult, expensive and time consuming (or some combination of these), as achieving them in this way. For example a 'slight' improvement in sewage effluent quality.
Slight	Slightly beneficial
Medium or short term impacts on the affected system(s) or party(ies). Mitigation is very easy, cheap, less time consuming or not necessary. For example a temporary fluctuation in the water table due to water abstraction.	A short to medium term impact and negligible benefit to the affected system(s) or party(ies). Other ways of optimising the beneficial effects are easier, cheaper and quicker, or some combination of these.
No effect	Don't know/Can't know
The system(s) or party(ies) is not affected by the proposed development.	In certain cases it may not be possible to determine the severity of an impact.

Table 7: Overall Significance Rating

OVERALL SIGNIFICANCE (THE COMBINATION OF ALL THE ABOVE CRITERIA AS AN OVERALL SIGNIFICANCE)	
VERY HIGH NEGATIVE	VERY BENEFICIAL (VERY HIGH +)
<p>These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or social) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects. Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance. Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with VERY HIGH significance.</p>	
HIGH NEGATIVE	BENEFICIAL (HIGH +)
<p>These impacts will usually result in long term effects on the social and/or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light. Example: The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated. Example: The change to soil conditions will impact the natural system, and the impact on affected parties (such as people growing crops in the soil) would be HIGH.</p>	
MODERATE NEGATIVE	SOME BENEFITS (MODERATE +)
<p>These impacts will usually result in medium to long term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or social) environment. These impacts are real but not substantial. Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.</p>	
LOW NEGATIVE	FEW BENEFITS (LOW +)
<p>These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by the public and/or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect. Example: The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels. Example: The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people who live some distance away.</p>	
NO SIGNIFICANCE	
<p>There are no primary or secondary effects at all that are important to scientists or the public. Example: A change to the geology of a particular formation may be regarded as severe from a geological perspective, but is of NO significance in the overall context.</p>	
DON'T KNOW	
<p>In certain cases it may not be possible to determine the significance of an impact. For example, the primary or secondary impacts on the social or natural environment given the available information. Example: The effect of a particular development on people's psychological perspective of the environment.</p>	

Prioritising

The evaluation of the issues, as described above, is used to prioritise which issues require mitigation measures, or which issues might lead to a conclusion that the particular alternative under assessment is not appropriate.

Negative issues that are ranked as being of “**HIGH**” significance will need to be investigated further to determine how the impacts can be minimised, or what alternative activities or mitigation measures can be implemented.

For issues identified as having a negative impact of “**MODERATE**” significance, it would be standard practice to investigate alternate activities and/or mitigation measures. The most effective and practical mitigation measures will then be proposed.

For impacts ranked as “**LOW**” significance, no investigations or alternatives will be considered. Possible management measures will be investigated to ensure that the impacts remain of low significance.

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

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

The preferred location is the only location currently under investigation. Due to the location and presence of the potential mineral resources, the initial site layout is the only alternative considered. The absolute final location of the drill sites and trenches can only be established (should it need to move from the current preferred location) once an access agreement has been discussed and signed with the relevant landowner and/or land occupiers, and this can only be done once the Prospecting Right has been approved. It should be noted that the initial layout was revised to take into consideration the environmental constraints and this will thus be the preferred layout (refer to Figure 6 included above). This has been done by ensuring that drill sites and trenches are located outside of sensitive areas such as drainage lines and wetlands and their regulatory buffers as well as heritage sites and the recommended 50 m buffer. The CBA in the western part of the site could not be avoided as the mineralisation along the dolomite/shale contact in this area needs to be tested. However, it should be noted that according to the Ecological Assessment, this area has been degraded by livestock farming. Thus based on the small footprint of the drill holes and trenches and the degradation of the site, it was not deemed necessary to move these holes from an ecological perspective.

The identified potential impacts range from air pollution such as dust, noise pollution, soil pollution, waste pollution, surface water pollution, impacts related to fauna and flora, visual impacts and socio-economic impacts. All these will be properly managed. None of these impacts will be of high significance since the proposed prospecting activities will be of small scale, short term, mitigation measures will be adhered to and progressive rehabilitation will take place. Please refer to Table 3 and Table 4 which indicates the significance of impacts by taking the proposed mitigation measures into consideration.

All anticipated impacts with the relevant mitigation measures have been included in Section (v) above - Tables 1 to 4.

The only concerns raised to date regarding the layout was submitted by Eskom. There is an Eskom powerline that traverse the site and as such permission will have to be obtained from Eskom for drill holes in close proximity to this line. Mr Greeringh (Senior Consultant Environmental Management from Eskom) sent through the requirements for works in or near Eskom servitudes (as outlined in the Section (iv)(1)(c)). These requirements will be adhered to at all times and permission will be obtained from Eskom prior to any work commencing on site. It should be noted that the drill holes and trenches could not be moved further away from this line as it is bound by the mineralisation along the dolomite/shale contact.

It should be noted that should the prospecting right be approved by DMR the applicant will compile and sign an access agreement with the relevant landowners and/or land occupiers and they will be compensated accordingly. The fees paid to the affected landowner/s and/or land occupiers for prospecting will be standard fees and will be determined and discussed with the relevant landowner/s and/or land occupiers once the Right has been approved.

The issues and comments received will be addressed on an individual basis. These individuals will either be contacted telephonically, via e-mail or registered mail in order to respond appropriately to the concerns raised.

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

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

The only concerns raised to date regarding the layout was submitted by Eskom. There is an Eskom powerline that traverse the site and as such permission will have to be obtained from Eskom for drill holes in close proximity to this line. Mr Greeringh (Senior Consultant Environmental Management from Eskom) sent through the requirements for works in or near Eskom servitudes (as outlined in the Section (iv)(1)(c)). These requirements will be adhered to at all times and permission will be obtained from Eskom prior to any work commencing on site. It should be noted that the drill holes and trenches could not be moved further away from this line as it is bound by the mineralisation along the dolomite/shale contact.

Ms Higgitt (SAHRA) reminded the EAP that all development applications are processed via their online portal, the South African Heritage Resources Information System (SAHRIS) found at the following link: <http://sahra.org.za/sahris/> and that they do not accept emailed, posted, hardcopy, faxed, website links or DropBox links as official submissions. The EAP responded by stating that the notification that was sent was an initial notification and that the DBAR and the Heritage Assessment would be uploaded to the system as per the requirements once available. No changes to the layout was required as a result of this correspondence.

Mr Lengane Bogatsu (Chief Director: Land Restitution Support North West) notified the EAP of the land claim status of these properties, which are as follows:

1. De Paarl 246 KP – There is an existing land claim however it was dismissed due to the fact that it does not meet the requirements of Section 2 of the Restitution of Land Rights Act No. 22 of 1994.
2. Bedford 254 KP – No land claims
3. Goedgedacht 255 KP – No land claims
4. Syferbult 257 KP – There is an existing land claim however it was dismissed due to the fact that it does not meet the requirements of Section 2 of the Restitution of Land Rights Act No. 22 of 1994.

The letters received from the Department is included in Appendix 2 of this report. No changes to the layout was required as a result of this correspondence.

It should be noted that any comments received on the Draft BAR will be incorporated in Section (vii) above and Appendix 3 (IRT). The mitigation measures related to the potential impacts for the project as a whole are listed below:

Access agreements, safety and accommodation

- Landowners and/or Land Occupiers must be informed of all activities to be undertaken on site as soon as the information becomes available. Please note that should an authorisation be granted for prospecting, access agreements must be put in place with the Landowners and/or Land Occupiers that must stipulate these aspects after which the Landowners and/or Land Occupiers and applicant should negotiate appropriate terms, should they not agree.
- The access routes required must be made available to Landowners and/or Land Occupiers once the final location of the drill sites and trenches have been approved by DMR.
- Prospecting must not be conducted within 100 m from livestock pens or stalls unless with prior arrangement and agreement with the relevant Landowners and/or Land Occupiers.

Air pollution

- Dust abatement by wetting down exposed areas, at drill sites and trenches will be required.

- Dust abatement by wetting down exposed areas, at drill sites and trenches, when necessary.
- Vehicles should stay on the approved or available tracks as far as practically possible.
- Low speed limits must be set to avoid the creation of dust ($\leq 40\text{km/hr}$).
- All the equipment and vehicles should be equipped with the manufacturers' stock standard exhaust systems which will minimise the amount of emissions from their engines.
- No burning of waste must be allowed on site.
- Fire extinguishers and other fire safety equipment must be available on site.
- Drilling and trenching locations, as set out by the final layout plan and as discussed with the relevant landowners and/or land occupiers must be adhered to.
- Excavations and other clearing activities must only be done during agreed upon working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.
- Any complaints or claims emanating from the lack of dust control must be attended to immediately by the Project Geologist and Drilling Contractor.
- All areas must be rehabilitated immediately upon completion of work conducted.

Noise pollution

- The activities must comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislations and local by-laws regarding noise control.
- Employees should be supplied with ear plugs, when necessary. All prospecting vehicles should be maintained in a road worthy condition.
- All work must be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners.

Waste pollution

- Scavenger proof bins should be made available to avoid windblown litter.
- Bins should be emptied on a regular basis.
- Domestic waste must be removed from site - no burying or burning of domestic waste must be allowed.
- Enviro-loo ablution facilities should be regularly serviced.

Water pollution

- Prospecting activities must not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands.
- Enviro-loo ablution facilities must not be placed within 100 m of any water body.
- All storage tanks (if any) containing hazardous materials must be placed in bunded containment areas with sealed surfaces.
- The bund wall must be high enough to contain 110% of the total volume of the stored hazardous material with an additional allocation for potential high runoff stormwater events.
- Any hazardous substances must be stored at least 100 m from any of the water bodies on site.
- Contaminated wastewater should be managed by the Contractor to ensure existing water resources on the site are not contaminated.
- An emergency plan for spillages must be in place.

Soil pollution

- Dust abatement by wetting down exposed areas, at drill sites and trenches, when necessary.
- Stockpiles must not be higher than the 2 m height restriction.

- Drip trays should be used under drilling and excavation equipment to ensure no spillage of oils and fuels onto the ground surface.
- Oils and fuel must be stored in areas with an impermeable surface to avoid spillages.
- Any spillages which may occur should be investigated and immediate action must be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, these must be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil must be excavated and disposed at a suitably licensed and registered landfill.
- Stormwater runoff in and around drill holes and trenches should be controlled.
- Equipment and vehicles should be kept within the limits of the already disturbed areas, if at all possible.
- Erosion control measures (i.e. silt fences) should be applied in areas which have high risk for erosion.

Fauna and Flora

- The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint.
- Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible.
- The contractor/applicant must monitor vegetation clearing on site. The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough.
- The prospecting footprint must avoid identified floral SCC as much as practically possible.
- Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction.
- The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly.
- Aquatic features identified on site must be avoided.
- The contractor and staff must be made aware of these “No-Go” areas.
- The contractor/applicant must monitor for encroachment within these areas.
- The Alien Vegetation Rehabilitation and Management Plan must be implemented.
- The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly.
- All temporarily impacted areas must be rehabilitated back to their original condition.
- Only topsoil from the immediate area must be used for rehabilitation.
- All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan.

Fire Prevention

- The Drilling Contractor must have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.
- No fires must be permitted on site. Cooking should only be allowed on gas-stoves at designated areas.

Erosion

- Wind screening and stormwater control will be undertaken to prevent soil loss from the site.
- All erosion control mechanisms will be regularly maintained.

- Re-vegetation of disturbed surfaces will occur immediately after the prospecting activities are completed.
- Rehabilitation will be undertaken progressively

Cultural Heritage Artefacts

- Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA must be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA will be followed.
- The contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken.
- Any discovered artefacts must not be removed under any circumstances. Any destruction of a site must only be allowed once a permit is obtained and the site has been mapped and noted.
- Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6)
- Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.
- This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken.
- As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden.

Livestock

- Landowners and/or land occupiers must be informed of the planned dates of the prospecting activities.
- Site activities must be restricted to daylight hours between 6 am and 6 pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon.
- Drilling and trenching must not take place within 100 m of livestock pens or any wetlands and drainage lines and their regulatory buffers.

Rehabilitation

- Prior to rehabilitation of the site, all remnants of foreign debris should be removed from the site.
- All holes and trenches must be covered first with subsoil and then with topsoil (minimum of 10 cm deep). Topsoil should be spread to the original depth (30 cm where possible).
- As topsoil will contain all cleared vegetation, no additional treatment should be required.
- The soil must cover all the roots and be well firmed down to a level equal to that of the surrounding *in situ* material.
- Control weeds by means of extraction, cutting or other approved methods.

- Monitoring must be undertaken once a month or until rehabilitation has been deemed successful.
- Follow up inspections must be conducted every two months to remove upcoming seedlings of alien vegetation.
- Continued monitoring throughout the life of the project will be required as the risk of alien plant species invasion is never eliminated.
- A single permanent marker will be required to mark the location of the drill hole for future reference. The construct of the marker shall be cleared with the landowner.
- All rehabilitation referred to in this environmental management programme will be done concurrent to prospecting operations as set out in the MPRDA. Best practice methods will be used.
- Continuous monitoring of possible soil erosion will be required.

ix. Motivation where no alternative sites were considered.

The applicant specialises in exploration/prospecting and mining and these are thus the only services the company provides. The applicant is also committed to utilising the best technology currently available, thus no technology alternatives will be considered. The initial layout was revised to avoid sensitive areas such as wetlands and drainage lines as well as heritage sites (refer to Figure 6 above). The CBA in the western part of the site could not be avoided as the mineralisation along the dolomite/shale contact in this area needs to be tested. However, it should be noted that according to the Ecological Assessment, this area has been degraded by livestock farming. Thus based on the small footprint of the drill holes and trenches and the degradation of the site, it was not deemed necessary to move these holes from an ecological perspective.

The area is known to host a low grade gold-silver deposit known as Dwaalboom, hosted by dolostones of the Malmani Subgroup, Transvaal Supergroup. The mineralisation is confined to mineralised vein stockworks within a 14-25 m wide shallow dipping ore body containing about 20 million tons of ore at an average grade of 1.1 g/t gold.

The deposit has been drilled expensively in the past, but remains open-ended along strike. The primary objective of the current prospecting application will be to increase the confidence in the known ore resource and obtain detailed geophysical information on the area utilising modern airborne techniques in order to locate new geophysical targets that could correspond to mineralisation and drill these with the aim of increasing the resource size and improving the economics of the deposit.

In addition, successful prospecting may lead to the development of local mines and associated industries and be the catalyst for job creation in a generally impoverished area with very high levels of unemployment. It is apparent that large sections of the land have been degraded as a result of livestock farming and thus no severe biophysical consequences are anticipated should the operation proceed, however the potential to create a number of job opportunities may be lost.

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

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

Please refer to section (ix) above. The preferred location is the only location assessed. It should be noted that prospecting is a "locality bound" industry (it has to take place where the resources are) thus no alternative locations for prospecting can be assessed. No infrastructural components relevant to the project that are not locality bound other than the

site camp is applicable. It should be noted the initial layout was revised to avoid sensitive areas such as wetlands and drainage lines as well as heritage sites (refer to Figures 6 above). The CBA in the western part of the site could not be avoided as the mineralisation along the dolomite/shale contact in this area needs to be tested. However, it should be noted that according to the Ecological Assessment, this area has been degraded by livestock farming. Thus based on the small footprint of the drill holes and trenches and the degradation of the site, it was not deemed necessary to move these holes from an ecological perspective.

- i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout plan) through the life of the activity.** (including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures).

Refer to section (vi) for the Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks. Refer to section (v), Table 3 and Table 4 for the significance statements of each identified impact as well as section (j) below.

All impacts were identified by a combination of the following:

- Desktop analysis.
- Consultation process with landowners and I&APs and previous experience.
- A comprehensive site visit.
- Specialist input (Ecological Assessment and Heritage Assessment)

j) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

This table is a summarised version of the impacts rated for each phase (Construction, Operation/Prospecting and Decommissioning/Rehabilitation) of the activities as per Table 3 and Table 4 in section (v). These have been refined from the application phase.

NAME OF ACTIVITY (E.g. For Prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc. etc.) E.g. For Mining – excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors etc. etc etc...)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (E.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated	SIGNIFICANCE If not mitigated	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance relocation, alternative activity etc.. etc) E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation.	SIGNIFICANCE
Non-invasive desktop analysis	Reduce environmental impact through proper planning	Environmental	Planning	N/A	N/A	N/A
Construction Phase						
Erection of the site camp	Fauna and Flora – Loss of bush / thornveld, Loss of SCC, Loss of aquatic habitats, Control of alien plant species and rehabilitation of disturbed areas	Environmental and Social	Construction	Moderate Negative	<ul style="list-style-type: none"> The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint. Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible. The contractor/applicant must monitor vegetation clearing on site. The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough. The prospecting footprint must avoid identified floral SCC as much as practically possible. Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction. The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly. Aquatic features identified on site must be avoided. 	Low Negative

					<ul style="list-style-type: none"> The contractor and staff must be made aware of these “No-Go” areas. The contractor/applicant must monitor for encroachment within these areas. The Alien Vegetation Rehabilitation and Management Plan must be implemented. The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly. All temporarily impacted areas must be rehabilitated back to their original condition. Only topsoil from the immediate area must be used for rehabilitation. All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan. 	
	Air Quality - Dust creation due to vegetation clearance			Moderate Negative	<ul style="list-style-type: none"> Dust abatement by wetting down exposed areas as a result of the construction of the site camp. 	Low Negative
	Surface and Groundwater Pollution – A number of activities associated with the construction phase, such as generation of waste, washing of vehicles and ablutions, are associated with potential contaminants.			Moderate Negative	<ul style="list-style-type: none"> Oils and fuel must be stored in areas with an impermeable surface to avoid spillages. Vehicle repairs, servicing and washing must be done off-site. Where it is necessary to service or repair a vehicle or item of plant in the field drip trays / plastic tarps must be used to catch drips, spills and leaks. Spill kits must be available on-site, and spills must be cleaned up immediately in accordance with an established protocol appropriate to the material in question. An emergency plan for spillages must be in place. Stockpiles should not be higher than the 2 m height restriction. Keep equipment and vehicles within the limits of the already disturbed areas, where possible. Rehabilitation of the affected landscape must commence as soon as possible once the site camp is no longer required. 	Low Negative
	Environmental training			Low Positive	<ul style="list-style-type: none"> All site personnel should have a basic level of environmental awareness training. Topics covered should include; <ul style="list-style-type: none"> What is meant by “Environment” Why the environment needs to be protected and conserved How construction activities can impact on the environment What can be done to mitigate against such impacts Awareness of emergency and spills response provisions Social responsibility during construction of the camp site e.g. being considerate to local residents The need for a “clean site” policy also needs to be explained to the workers. 	Moderate Positive
	Noise Pollution – Mainly as a result of vehicle movements on site			Low Negative	<ul style="list-style-type: none"> All work should be limited to daylight hours, i.e. between 6am and 6pm, unless otherwise agreed upon with landowners. 	Low Negative
	Waste pollution – Domestic waste produced by workers			Moderate Negative	<ul style="list-style-type: none"> Scavenger proof bins must be made available to avoid windblown litter. Bins should be emptied on a regular basis. Domestic waste must be removed from site - no burying or burning of domestic waste must be allowed. Enviro-loo ablution facilities should be serviced regularly. 	Low Negative
	Soils – Soil erosion and pollution due to exposed areas not being			Low Negative	<ul style="list-style-type: none"> Oils and fuel must only be stored in areas with an impermeable surface to avoid spillages. 	Low Negative

	managed, leaks or spillages from ablution facilities				<ul style="list-style-type: none"> Any spillages which may occur should be investigated and immediate action must be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, this must be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil must be excavated and disposed at a suitably licensed and registered landfill. Stormwater runoff in and around the camp site should be controlled. Equipment and vehicles should be kept within the limits of the already disturbed areas, where possible. Erosion control measures (i.e. silt fences) should be applied in areas that have high risk for erosion. 	
	Fire Prevention			Low Positive	<ul style="list-style-type: none"> The Drilling Contractor must have fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process. No fires must be permitted on site. Cooking must only be allowed on gas-stoves at designated areas. 	Moderate Positive
	Erosion			Low Negative	<ul style="list-style-type: none"> Wind screening and stormwater control should be undertaken to prevent soil loss from the site. All erosion control mechanisms should be regularly maintained. Re-vegetation of disturbed surfaces must occur immediately after the construction and prospecting activities have been completed. Rehabilitation should be undertaken progressively 	Low Negative
	Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles			Moderate Negative	<ul style="list-style-type: none"> Visual impacts will be of a temporary nature and unfortunately cannot be mitigated. 	Moderate Negative
	Cultural and Heritage Artefacts			Moderate Negative	<ul style="list-style-type: none"> Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA must be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA must be followed. The Contractor should ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. Any discovered artefacts must not be removed under any circumstances. Any damage to or destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted. 	Low Negative

					<ul style="list-style-type: none"> Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6) Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences. This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken. As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden. 	
	Livestock – due to disturbance by noise and vibration from vehicle traffic.			Moderate Negative	<ul style="list-style-type: none"> Landowners and Land occupiers should be informed of the planned dates of construction activities. Site activities should be restricted to daylight hours between 6am and 6pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon. The camp site must not be constructed within 100 m of livestock pens, or any wetlands and drainage lines and their regulatory buffers. 	Low Negative
Operational Phase (Drilling and Trenching)						
Drilling and Trenching	Environmental training	Environmental and Social	Operational	Low Positive	<ul style="list-style-type: none"> All site personnel should have a basic level of environmental awareness training. Topics covered should include; <ul style="list-style-type: none"> What is meant by “Environment” Why the environment needs to be protected and conserved How construction activities can impact on the environment What can be done to mitigate against such impacts Awareness of emergency and spills response provisions Social responsibility during construction of the camp site e.g. being considerate to local residents The need for a “clean site” policy also needs to be explained to the workers. 	Moderate Positive

	<p>Air quality – dust creation due to vehicle movement, drilling and bulk sampling</p>			Moderate Negative	<ul style="list-style-type: none"> • Dust abatement by wetting down exposed areas, at drill sites and trenches will be required. • Vehicles will stay on the approved or available tracks as far as practically possible. • Low speed limits will be set to avoid the creation of dust ($\leq 40\text{km/hr}$). • All the equipment and vehicles will be equipped with the manufactures stock standard exhaust systems which will minimise the amount of emissions from their engines. • No burning of waste will be allowed on site. • Fire extinguishers and other fire safety equipment will be available on site. • Drilling and trenching locations, as set out by the final layout plan and as discussed with the relevant landowners and/or land occupiers will be adhered to. • Excavations and other clearing activities will only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas. • Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Project Geologist and Drilling Contractor. • All areas will be rehabilitated immediately upon completion of work conducted. 	Low Negative
	<p>Noise pollution – vehicle movement, use of drill rigs and excavation machinery</p>			Low Negative	<ul style="list-style-type: none"> • The activities will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislations and local by-laws regarding noise control. • Employees will be supplied with ear plugs. All prospecting vehicles will be maintained in a road worthy condition. • All work will be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners. 	Low Negative
	<p>Waste pollution – domestic waste produced by workers</p>			Moderate Negative	<ul style="list-style-type: none"> • Scavenger proof bins will be made available to avoid windblown litter. • Bins will be emptied on a regular basis. • Domestic waste to be removed from site - no burying or burning of domestic waste will be allowed. • Enviro-loo ablution facilities will be regularly serviced. 	Low Negative
	<p>Water pollution (Surface and groundwater, wetlands and water bodies) – due to possible spillages, leaks from vehicles or ablution facilities</p>			Moderate Negative	<ul style="list-style-type: none"> • Prospecting activities will not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands. • Enviro-loo ablution facilities will not be placed within 100 m of any water body. • All storage tanks (if any) containing hazardous materials will be placed in bunded containment areas with sealed surfaces. • The bund wall must be high enough to contain 110% of the total volume of the stored hazardous material with an additional allocation for potential high runoff stormwater events. • Any hazardous substances will be stored at least 100 m from any of the water bodies on site. • Contaminated wastewater will be managed by the Contractor to ensure existing water resources on the site are not contaminated. • An emergency plan for spillages must be in place. 	Low Negative

	<p>Soils – soil erosion and pollution due to exposed areas not being managed, leaks or spillages from ablution facilities</p>			<p>Low Negative</p>	<ul style="list-style-type: none"> • Dust abatement by wetting down exposed drill and trenching sites will be required. • Stockpiles will not be higher than the 2 m height restriction. • The use of drip trays under drilling and excavation equipment to ensure no spillage of oils and fuels onto the ground surface. • Oils and fuel will be stored in areas with an impermeable surface to avoid spillages. • Any spillages which may occur will be investigated and immediate action will be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, this will be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil will be excavated and disposed at a suitably licensed and registered landfill. • Stormwater runoff in and around drill holes and trenches will be controlled. • Keep equipment and vehicles within the limits of the already disturbed areas if at all possible. • Apply erosion control measures (i.e. silt fences) in areas that have high risk for erosion. 	<p>Low Negative</p>
	<p>Fauna and Flora – Loss of bush / thornveld, Loss of SCC, Loss of aquatic habitats, Control of alien plant species and rehabilitation of disturbed areas</p>			<p>Moderate Negative</p>	<ul style="list-style-type: none"> • The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint. • Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible. • The contractor/applicant must monitor vegetation clearing on site. • The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough. • The prospecting footprint must avoid identified floral SCC as much as practically possible. • Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction. • The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly. • Aquatic features identified on site must be avoided. • • The contractor and staff must be made aware of these “No-Go” areas. • The contractor/applicant must monitor for encroachment within these areas. • The Alien Vegetation Rehabilitation and Management Plan must be implemented. • The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly. • All temporarily impacted areas must be rehabilitated back to their original condition. • Only topsoil from the immediate area must be used for rehabilitation. • All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan. 	<p>Low Negative</p>

	Fire Prevention			Low Positive	<ul style="list-style-type: none"> The Drilling Contractor will have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process. No fires must be permitted on site. Cooking must only be allowed on gas-stoves at designated areas. 	Moderate Positive
	Erosion			Low Negative	<ul style="list-style-type: none"> Wind screening and stormwater control will be undertaken to prevent soil loss from the site. All erosion control mechanisms will be regularly maintained. Re-vegetation of disturbed surfaces will occur immediately after the prospecting activities are completed. Rehabilitation will be undertaken progressively 	Low Negative
	Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles			Moderate Negative	<ul style="list-style-type: none"> Visual impacts will be of a temporary nature and unfortunately cannot be mitigated. 	Moderate Negative
	Cultural and Heritage Artefacts			Moderate Negative	<ul style="list-style-type: none"> Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA will be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA will be followed. The contractor will ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. Any discovered artefacts will not be removed under any circumstances. Any destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted. Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6) Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences. This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken. 	Low Negative

					<ul style="list-style-type: none"> As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden. 	
	<p>Livestock – due to disturbance by noise and vibration from vehicle traffic and drilling and excavation activities.</p>			Moderate Negative	<ul style="list-style-type: none"> Landowners and/or land occupiers will be informed of the planned dates of the prospecting activities. Site activities will be restricted to daylight hours between 6 am and 6 pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon. Drilling and trenching must not be constructed within 100 m of livestock pens, or any wetlands and drainage lines and their regulatory buffers. 	Low Negative
Decommissioning and Rehabilitation						
Closure	<p>Fauna and Flora – Control of alien species and rehabilitation of disturbed areas</p>	Environmental	Closure and Decommissioning	Moderate Negative	<ul style="list-style-type: none"> The Alien Vegetation Rehabilitation and Management Plan must be implemented. The contractor/applicant must ensure adequate effort has been taken to reduce the spread of alien invasive species at closure. All temporarily impacted areas must be rehabilitated back to their original condition. Only topsoil from the immediate area must be used for rehabilitation. All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan. A suitably qualified individual/botanist should conduct a closure audit to ensure rehabilitation has been undertaken in a satisfactory manner. 	Low Negative
	<p>Land degradation – due to improper site clean-up</p>			Low Negative	<ul style="list-style-type: none"> All waste bins and domestic waste will be removed from site once the activity is complete. Excess topsoil not used in rehabilitation will be levelled. All temporary and sampling equipment (i.e. waste bins, Enviro-loo ablution facilities, sample bags etc.) used during prospecting and rehabilitation will be removed from site. The site will be cleared of all litter. Final inspection in order to ensure adherence to EMP guidelines, in regards to the completion of localized / remaining areas of impact, monitoring of rehabilitation success, etc. 	Low Negative
Social						
Social Impacts	<p>Increase Traffic - During prospecting 4x4 vehicles will be utilising the existing road network. This may result in damage to the existing roads and tracks.</p>	Social	All Phases	Low Negative	<ul style="list-style-type: none"> Speed limits will not exceed 40km/h on farm roads and tracks. All drivers will be made aware of the procedures to be followed if an accident occurs. 	Low Negative
	<p>Nuisance (Air and Noise) - Impacts on air quality will primarily result</p>			Moderate Negative	<ul style="list-style-type: none"> The activities will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its 	Low Negative

<p>from increased dust levels associated with the required drilling and trenching activities and associated traffic on farm roads. It is anticipated that there will be an increase in noise levels during prospecting which will be associated with the operation of vehicles and sampling equipment.</p>				<p>regulations as well as other applicable noise regulations and local by-laws regarding noise control.</p> <ul style="list-style-type: none"> • All prospecting vehicles will be maintained in a road worthy condition. • All work will be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners and/or land occupiers. • Vehicles will stay on existing / approved tracks / roads, as far as practically possible. • Low speed limits will be set on access roads to avoid the creation of dust ($\leq 40\text{km/hr}$). • All the equipment and vehicles will be equipped with the manufactures stock standard exhaust systems which will minimise the amount of emissions from their engines. • No burning of waste will be allowed on site. • Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Project Geologist, Site manager and or ESO/ECO. • All areas will be rehabilitated immediately upon completion of work conducted. 	
<p>Water pollution (Surface and groundwater sources , wetlands and drainage lines) – due to possible spillages and/or leaks from vehicles or temporary ablution facilities (i.e. enviro-loo)</p>			<p>Moderate Negative</p>	<ul style="list-style-type: none"> • Enviro-loo ablution facilities will not be placed within 100 m of any water body. • Prospecting activities will not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands. • Oils and fuel must be stored in areas with an impermeable surface to avoid spillages. • Vehicle repairs, servicing and washing must be done off-site, as far as practically possible. • Where it is necessary to service or repair a vehicle or item of plant in the field drip trays / plastic tarps must be used to catch drips, spills and leaks. • Spill kits must be available on-site, and spills must be cleaned up immediately in accordance with an established protocol appropriate to the material in question. • An emergency plan for spillages must be in place. 	<p>Low Negative</p>
<p>Visual Impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles.</p>			<p>Moderate Negative</p>	<ul style="list-style-type: none"> • Visual impacts will be of a temporary nature and unfortunately cannot be mitigated. 	<p>Moderate Negative</p>
<p>Economic - According to the Integrated Development Plan (IDP) of the local municipality the unemployment rate is currently at 51%. Many 'poverty gaps' exist, with settlements in the nearby towns. Therefore, depending on the number of employment opportunities to be created, the project could have a positive impact in terms of employment.</p>			<p>Low Positive</p>	<ul style="list-style-type: none"> • Local labour and service companies will be used where possible. • Prospecting Rights do not supersede property rights hence the applicant will comply with all reasonable requirements to minimize the impact of prospecting on landowners, land occupiers and agricultural activities. 	<p>Moderate Positive</p>

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked **Appendix 5**

k) Summary of specialist reports.

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

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
Ecological Assessment	<p>The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint.</p> <p>Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible.</p> <p>The contractor/applicant must monitor vegetation clearing on site. Only demarcated areas for drilling and trenching must be cleared to the minimum required for access and adjacent and/or other areas must not be disturbed.</p> <p>No firewood harvesting must be allowed.</p> <p>Fires must not be made on site. Cooking should only be allowed on gas-stoves at designated areas.</p> <p>Hunting must not be allowed on site.</p> <p>Cigarette butts must not be disposed of in the field.</p> <p>Should any protected tree or plant species be found on site, they must be avoided and a safe buffer (10-15 m) distance placed around them. If for any reason they cannot be avoided, the relevant permits must be applied for prior to removal.</p> <p>Vehicles must remain on approved tracks.</p> <p>The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough.</p> <p>The prospecting footprint must avoid identified floral SCC as much as practically possible.</p> <p>Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction.</p> <p>The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly.</p> <p>Aquatic features identified on site must be avoided.</p> <p>The contractor and staff must be made aware of these "No-Go" areas.</p> <p>The contractor/applicant must monitor for encroachment within these areas.</p> <p>The Alien Vegetation Rehabilitation and Management Plan must be implemented.</p> <p>The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly.</p> <p>All temporarily impacted areas must be rehabilitated back to their original condition.</p> <p>Only topsoil from the immediate area must be used for rehabilitation.</p> <p>All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan.</p>	X	Table 9.2
Heritage Assessment	Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these	X	Chapter 8

	<p>heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6)</p> <p>Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.</p> <p>This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken.</p> <p>far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden.</p>		
--	--	--	--

Attach copies of Specialist Reports as appendices

I) Environmental Impact Statement

i. Summary of the key findings of the environmental impact assessment;

If suggested mitigation measures are implemented and due to the small scale, short term nature of the prospecting activities and the fact that the area will be rehabilitated back to its original state as it was prior to prospecting (i.e. agricultural land/grazing areas), it is unlikely that the proposed development will create any long-term negative impacts of high significance. On the contrary, the development will allow for business for local service companies and job creation in the short term. The majority of the negative impacts identified can be mitigated to low significance.

ii. Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as **Appendix 6**.

Refer to Appendix 6 for an A3.

iii. Summary of the positive and negative impacts and risks of the proposed activity and identified alternative

The identified potential impacts for the preferred alternative range from air pollution such as dust, noise pollution, soil pollution, waste pollution, surface water pollution, impacts on fauna and flora impacts, visual impacts, and socio-economic impacts. All these will be properly managed. None of these impacts will be of high significance since the proposed prospecting activities will be of small scale, short term, mitigation measures will be adhered to and concurrent rehabilitation will be practiced. Please refer to tables 1 to 4 which reviews the significance of impacts by taking the proposed mitigation measures into consideration.

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives and the impact management outcomes from the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

Access agreements, safety and accommodation

- Landowners and/or Land Occupiers will be informed of all activities to be undertaken on site as soon as the information becomes available. Please note that should an authorisation be granted for prospecting, access agreements will be put in place with the Landowners and/or Land Occupiers that will stipulate these aspects after which the Landowners and/or Land Occupiers and applicant will negotiate appropriate terms, should they not agree.
- The access routes required will be made available to Landowners and/or Land Occupiers once the final location of the drill sites and trenches have been approved by DMR.
- Prospecting will not be conducted within 100 m from livestock pens or stalls unless with prior arrangement and agreement with the relevant Landowners and/or Land Occupiers.

Air pollution

- Dust abatement by wetting down exposed areas, at drill sites and trenches will be required.
- Vehicles will stay on the approved or available tracks as far as practically possible.
- Low speed limits will be set to avoid the creation of dust ($\leq 40\text{km/hr}$).
- All the equipment and vehicles will be equipped with the manufactures stock standard exhaust systems which will minimise the amount of emissions from their engines.
- No burning of waste will be allowed on site.
- Fire extinguishers and other fire safety equipment will be available on site.
- Drilling and trenching locations, as set out by the final layout plan and as discussed with the relevant landowners and/or land occupiers will be adhered to.
- Excavations and other clearing activities will only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.
- Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Project Geologist and Drilling Contractor.
- All areas will be rehabilitated immediately upon completion of work conducted.

Noise pollution

- The activities will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislations and local by-laws regarding noise control.
- Employees will be supplied with ear plugs. All prospecting vehicles will be maintained in a road worthy condition.
- All work will be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners.

Waste pollution

- Scavenger proof bins will be made available to avoid windblown litter.
- Bins will be emptied on a regular basis.
- Domestic waste to be removed from site - no burying or burning of domestic waste will be allowed.
- Enviro-loo ablution facilities will be regularly serviced.

Water pollution

- Prospecting activities will not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands.

- Limited amounts of water (approximately xxx litres / day) will be required during the prospecting phase.
- Enviro-loo ablution facilities will not be placed within 100 m of any water body.
- All storage tanks (if any) containing hazardous materials will be placed in bunded containment areas with sealed surfaces.
- The bund wall must be high enough to contain 110% of the total volume of the stored hazardous material with an additional allocation for potential high runoff stormwater events.
- Any hazardous substances will be stored at least 100 m from any of the water bodies on site.
- Contaminated wastewater will be managed by the Contractor to ensure existing water resources on the site are not contaminated.
- An emergency plan for spillages must be in place.

Soil pollution

- Dust abatement by wetting down exposed drill and trenching sites will be required.
- Stockpiles will not be higher than the 2 m height restriction.
- The use of drip trays under drilling and excavation equipment to ensure no spillage of oils and fuels onto the ground surface.
- Oils and fuel will be stored in areas with an impermeable surface to avoid spillages.
- Any spillages which may occur will be investigated and immediate action will be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, this will be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil will be excavated and disposed at a suitably licensed and registered landfill.
- Stormwater runoff in and around drill holes and trenches will be controlled.
- Keep equipment and vehicles within the limits of the already disturbed areas if at all possible.
- Apply erosion control measures (i.e. silt fences) in areas that have high risk for erosion.

Fauna and flora

-
- The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint.
- Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible.
- The contractor/applicant must monitor vegetation clearing on site. Only demarcated areas for drilling and trenching must be cleared to the minimum required for access and adjacent and/or other areas must not be disturbed.
- No firewood harvesting must be allowed.
- Fires must not be made on site. Cooking should only be allowed on gas-stoves at designated areas.
- Hunting must not be allowed on site.
- Cigarette butts must not be disposed of in the field.
- Should any protected tree or plant species be found on site, they must be avoided and a safe buffer (10-15 m) distance placed around them. If for any reason they cannot be avoided, the relevant permits must be applied for prior to removal.
- Vehicles must remain on approved tracks.
- The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough.
- The prospecting footprint must avoid identified floral SCC as much as practically possible.
- Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction.

- The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly.
- Aquatic features identified on site must be avoided.
- The contractor and staff must be made aware of these “No-Go” areas.
- The contractor/applicant must monitor for encroachment within these areas.
- The Alien Vegetation Rehabilitation and Management Plan must be implemented.
- The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly.
- All temporarily impacted areas must be rehabilitated back to their original condition.
- Only topsoil from the immediate area must be used for rehabilitation.
- All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan.

Fire Prevention

- The Drilling Contractor will have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.
- No fires must be permitted on site. Cooking must only be allowed on gas-stoves at designated areas.

Erosion

- Wind screening and stormwater control will be undertaken to prevent soil loss from the site.
- All erosion control mechanisms will be regularly maintained.
- Re-vegetation of disturbed surfaces will occur immediately after the prospecting activities are completed.
- Rehabilitation will be undertaken progressively

Cultural Heritage Artefacts

- Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA will be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA will be followed.
- The contractor will ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken.
- Any discovered artefacts will not be removed under any circumstances. Any destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted.
- Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6)
- Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.
- This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken.

As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh

bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden.

Livestock

- Landowners and/or land occupiers will be informed of the planned dates of the prospecting activities.
- Site activities will be restricted to daylight hours between 6 am and 6 pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon.
- Drilling and trenching must not be constructed within 100 m of livestock pens, or any wetlands and drainage lines and their regulatory buffers.

Rehabilitation

- Prior to rehabilitation of the site, all remnants of foreign debris shall be removed from the site.
- All holes and trenches will be covered first with subsoil and then with topsoil (minimum of 10 cm deep). Topsoil will be spread to the original depth (30 cm where possible).
- As topsoil will contain all cleared vegetation, no additional treatment will be required.
- The soil must cover all the roots and be well firmed down to a level equal to that of the surrounding in situ material.
- Control weeds by means of extraction, cutting or other approved methods.
- Monitoring will be undertaken once a month or until rehabilitation has been deemed successful.
- Follow up inspections will be conducted every two months to remove upcoming seedlings of alien vegetation.
- Continued monitoring throughout the life of the project will be required as the risk of alien plant species invasion is never eliminated.
- A single permanent marker will be required to mark the location of the drill hole for future reference. The construct of the marker shall be cleared with the landowner.
- All rehabilitation referred to in this environmental management programme will be done concurrent to prospecting operations as set out in the MPRDA. Best practice methods will be used.
- Continuous monitoring of possible soil erosion will be required.

Socio-economic

- Local labour and service companies will be used where possible.
- Prospecting Rights do not supersede property rights hence the applicant will comply with all reasonable requirements to minimize the impact of prospecting on landowners and agricultural activities

Environmental Training

- All site personnel will have a basic level of environmental awareness training. Topics covered should include;
 - What is meant by “Environment”;
 - Why the environment needs to be protected and conserved;
 - How exploration activities can impact on the environment;
 - What can be done to mitigate against such impacts;
 - Awareness of emergency and spills response provisions; and
 - Social responsibility during prospecting e.g. being considerate to local residents

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The following conditions will form part of the EA:

- All mitigation measures included in this report must be adhered to.
- A detailed final layout plan will be submitted to the DMR on completion of access agreements with landowners.
- An ECO/ ESO must be appointed for the proposed development.

o) Description of any assumptions, uncertainties and gaps in knowledge

Which relate to the assessment and mitigation measures proposed

The following assumptions, limitations and gaps are applicable:

- It was assumed that if no abstraction of water will occur and no drainage lines or actual wetland areas or other natural waterbodies will be disturbed that a Water Use Authorisation will not be required.
- The final bulk sample layout (should it need to change) can only be finalised after access agreements have been signed with the relevant landowners.

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

i. Reasons why the activity should be authorised or not.

Based on the analysis and findings as discussed throughout the report, there is no reason why the project should not be authorised. There are no environmental fatal flaws and all impacts can be effectively mitigated. The spatial extent of disturbance related to this activity is minimal and short term. The implementation of effective rehabilitation will ensure that the site is returned back to its original state (prior to prospecting) and that the impacts are reversed. In addition, the activity should be authorised in order for a better understanding of the mineral potential in the area to be obtained. Once a deposit is defined, a better understanding of its economic value will be achieved and this will then provide a better platform for making an informed decision about the potential for mining operations in this area.

ii. Conditions that must be included in the authorisation

Refer to section (n) above.

q) Period for which the Environmental Authorisation is required.

The project will entail a one (1) year non-invasive geophysical survey period (Phase 1) and a four (4) year invasive drilling period (Phase 2 and 3). Thus the authorisation is required for the duration of the prospecting right which is an initial 5 years plus a potential to extend the right by an addition to this of 3 years. Thus a total of 8 years.

r) Undertaking

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

The undertaking has been included in Part B (EMPr) of this report.

s) Financial Provision

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

The Prospecting Work Programme (PWP) initially estimated that a financial provision of R130,000 will be required to rehabilitate the areas disturbed during prospecting, which was estimated as a rough value required. Based on the total area that will be disturbed and taking into consideration the DMR quantum calculation guideline, these calculations has been refined and recalculated in Appendix 7. The Applicant will provide the indicated financial provision of **R226,040.26 (VAT inclusive)** for rehabilitation and post-monitoring of the site. The procedure to determine the quantum for financial provision has been aligned with the *Guideline document for the evaluation of the quantum of closure – related financial provision provided by a mine* (Department of Minerals and Energy, January 2005). This is an official guideline as contemplated in Regulation 54(1) to the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). In addition, as Regulations 53 and 54 of the Mineral and Petroleum Resources Development Regulations were replaced by the NEMA: Regulations pertaining to the financial provision for prospecting, exploration, mining or production operations (in GN 1147 GG 39425 of 20 November 2015). The NEM: Financial Provision Regulations was also used.

i. Explain how the aforesaid amount was derived.

The main anticipated impacts (after mitigating measures as set out in the EMP) are localised soil compaction, drill cuttings on drill sites and rehabilitation of backfilled drill holes and trenches as well as potential impacts to surface/groundwater due to prospecting. The site is dominated by mostly natural grazing land and it is not anticipated that the construction of access roads will be required for the proposed development as existing access is available.

Rehabilitation will be conducted in a progressive manner: All drill sites and trenches will be surveyed and backfilled on an ongoing basis as they are completed. The rehabilitation of drill sites would take the form of limited manual raking to open and flatten the surface area and very limited, targeted seeding of plants if the area is not in a disturbed area. The rehabilitation of the trenches will entail backfilling the site with the excavated material (soil and rock), before topsoil is replaced. The surface is left slightly mounded to allow for subsidence. Trenches will be inspected and photographed prior to and after excavation. Generally re-vegetation will begin naturally when top soil is spread and seeds in the seed bank germinate.

The m² master rate applied by the DMR in 2005 was used and CPI for every year thereafter added to get the m² master rate applicable to the last financial year (2017). The m² rates applicable to this prospecting programme is thus as follow:

- General surface rehabilitation = R 106, 853.73 / ha
- 2 to 3 years of maintenance and aftercare = R 1,422.00 / ha

The master rates applicable to general surface rehabilitation and 2 to 3 years maintenance and aftercare, cover the manual rehabilitation, the cost of procuring suitable seed, and its appropriate application to ensure germination. Based on the total area to be disturbed as well as each applicable component (i.e. drill holes, trenches and the site camp), the total provision to close out the impacts associated with the exploration campaign envisaged amounts to a maximum of R226,040.26 (VAT inclusive).

Please refer to Appendix 7 for detailed calculations.

ii. Confirm that this amount can be provided for from operating expenditure.

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

K2015268783 (South Africa) (Pty) Ltd will provide the indicated financial provision of R226,040.26 (VAT inclusive) for rehabilitation and post-monitoring of the prospecting site which has been included into the total of R17,193,500 required to finance the entire PWP (approved drilling and trenching).

t) Specific Information required by the competent Authority

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

(1) Impact on the socio-economic conditions of any directly affected person. (Provide the results of Investigation, assessment and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affect person including the landowner, lawful occupier or, where applicable, potential beneficiaries of any land restitution claim, attach the investigating report as an Appendix.

An initial consultation process was conducted (Appendix 2). During this process landowners, land occupiers, surrounding landowners, national, provincial and local government departments were identified and notified of the application. The following comments have been received to date:

The only concerns raised to date regarding the layout was submitted by Eskom. There is an Eskom powerline that traverse the site and as such permission will have to be obtained from Eskom for drill holes in close proximity to this line. Mr Greeringh (Senior Consultant Environmental Management from Eskom) sent through the requirements for works in or near Eskom servitudes (as outlined in the Section (iv)(1)(c)). These requirements will be adhered to at all times and permission will be obtained from Eskom prior to any work commencing on site. It should be noted that the drill holes and trenches could not be moved further away from this line as it is bound by the mineralisation along the dolomite/shale contact.

Ms Higgitt (SAHRA) reminded the EAP that all development applications are processed via their online portal, the South African Heritage Resources Information System (SAHRIS) found at the following link: <http://sahra.org.za/sahris/> and that they do not accept emailed, posted, hardcopy, faxed, website links or DropBox links as official submissions. The EAP responded by stating that the notification that was sent was an initial notification and that the DBAR and the Heritage Assessment would be uploaded to the system as per the requirements once available. No changes to the layout was required as a result of this correspondence.

Mr Lengane Bogatsu (Chief Director: Land Restitution Support North West) notified the EAP of the land claim status of these properties, which are as follows:

1. De Paarl 246 KP – There is an existing land claim however it was dismissed due to the fact that it does not meet the requirements of Section 2 of the Restitution of Land Rights Act No. 22 of 1994.
2. Bedford 254 KP – No land claims
3. Goedgedacht 255 KP – No land claims
4. Syferbult 257 KP – There is an existing land claim however it was dismissed due to the fact that it does not meet the requirements of Section 2 of the Restitution of Land Rights Act No. 22 of 1994.

The letters received from the Department is included in Appendix 2 of this report. No changes to the layout was required as a result of this correspondence.

Appendix 2 and 3 provides comprehensive details on the PPP to date with sufficient proof in regards to the above.

It should be noted that any comments received on the Draft BAR will be incorporated in Section (vii) above and Appendix 3 (IRT).

In addition, the following Socio-Economic Impacts have been identified:

POTENTIAL IMPACTS	SIGNIFICANCE RATING BEFORE MITIGATION	SIGNIFICANCE RATING WITH MITIGATION
SOCIO-ECONOMIC		
Increase Traffic - During prospecting 4x4 vehicles will be utilizing the existing road network. This may result in damage to the existing roads and tracks.	Extent: Local Duration: Short-term Intensity: Low Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Low Probability: May occur Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Nuisance (Air and Noise) - Impacts on air quality will primarily result from increased dust levels associated with the required drilling and trenching activities and associated traffic on farm roads. It is anticipated that there will be an increase in noise levels during prospecting which will be associated with the operation of vehicles and sampling equipment.	Extent: Local Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Local Duration: Short-term Intensity: Low Probability: Probable Significance: Low Degree of confidence: High Reversibility: Easily Achievable
Water pollution (Surface and groundwater sources, wetlands and drainage lines) – due to possible spillages and/or leaks from vehicles or temporary ablution facilities (i.e. enviro-loo)	Extent: Local Duration: Medium-term Intensity: Low Probability: Probable Significance: Moderate Degree of confidence: High Reversibility: Difficult	Extent: Local Duration: Short-term Intensity: Low Probability: Unlikely Significance: Low Degree of confidence: High Reversibility: Difficult
Visual Impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles.	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable	Extent: Site Duration: Short-term Intensity: Low Probability: Definite Significance: Moderate Degree of confidence: High Reversibility: Easily Achievable
Economic - According to the Integrated Development Plan (IDP) of the local municipality the unemployment rate is currently at 51%. Many 'poverty gaps' exist, with settlements in the nearby towns. Therefore, depending on the number of employment opportunities to be created, the project could have a positive impact in terms of employment.	Extent: Site Duration: Medium-term Intensity: Low Probability: May Occur Significance: Low Positive Degree of confidence: High Reversibility: N/A	Extent: Site Duration: Medium-term Intensity: Low Probability: Definite Significance: Moderate Positive Degree of confidence: High Reversibility: N/A

The following mitigation measures in regards to the above-mentioned impacts have been proposed:

Increased Traffic:

- Speed limits will not exceed 40km/h on farm roads and tracks.
- All drivers will be made aware of the procedures to be followed if an accident occurs.

Nuisance (Air and Noise):

- The activities will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable noise regulations and local by-laws regarding noise control.
- All prospecting vehicles will be maintained in a road worthy condition.
- All work will be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners and/or land occupiers.
- Vehicles will stay on existing / approved tracks / roads, as far as practically possible.
- Low speed limits will be set on access roads to avoid the creation of dust ($\leq 40\text{km/hr}$).
- All the equipment and vehicles will be equipped with the manufactures stock standard exhaust systems which will minimise the amount of emissions from their engines.
- No burning of waste will be allowed on site.
- Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Project Geologist, Site manager and or ESO/ECO.
- All areas will be rehabilitated immediately upon completion of work conducted.

Water Pollution:

- Enviro-loo ablution facilities will not be placed within 100 m of any water body.
- Prospecting activities will not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands.
- Oils and fuel must be stored in areas with an impermeable surface to avoid spillages.
- Vehicle repairs, servicing and washing must be done off-site, as far as practically possible.
- Where it is necessary to service or repair a vehicle or item of plant in the field drip trays / plastic tarps must be used to catch drips, spills and leaks.
- Spill kits must be available on-site, and spills must be cleaned up immediately in accordance with an established protocol appropriate to the material in question.
- An emergency plan for spillages must be in place.

Visual Impacts

- Visual impacts will be of a temporary nature and unfortunately cannot be mitigated.

Economic

- Local labour and service companies will be used where possible.
- Prospecting Rights do not supersede property rights hence the applicant will comply with all reasonable requirements to minimize the impact of prospecting on landowners, land occupiers and agricultural activities.

(2) Impact on any national estate referred to in section 3(2) of the

National Heritage Resources Act (Provide the results of Investigation, assessment and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.3.4; 2.11.6 and 2.12 herein).

A Heritage Assessment was undertaken for the proposed development (refer to Appendix 8 for full report). Fieldwork undertaken as part of this assessment resulted in the identification of seven heritage archaeological and heritage sites. These were numbered from DWA001 to DWA007. A summary of each site is provided below:

DWA001:	Historic Black Homestead	S24.90503°; E26.76158°
DWA002:	Burial Ground	S24.90815°; E26.75350°
DWA003:	Historic to Recent Structure	S24.90065°; E26.75601°

DWA004:	Historic to Recent Structure	S24.90109°; E26.75556°
DWA005:	Historic to Recent Structure	S24.89956°; E26.75659°
DWA006:	Midden	S24.90478°; E26.74648°
DWA007:	Historic to Recent Black Homestead	S24.90810°; E26.80282°

Please note that a 50 m buffer has been placed around all sites of heritage importance and that all drill holes and trenches have been moved outside of the buffers and thus it is not anticipated that any heritage features will be impacted by the proposed development (refer to Figure 6 included above).

In addition a Desktop Paleontological Assessment was also conducted for the proposed development. In addition a Desktop Paleontological Assessment was also conducted for the proposed development. The desktop investigation indicates that the proposed study area is underlain by potentially fossil-bearing sedimentary strata (stromatolitic carbonate interbeds) of the Early Proterozoic Timeball Hill Formation (Pretoria Group, Transvaal Supergroup) that are capped by superficial deposits of low to very low palaeontological sensitivity.

General Recommendations include the following:

Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6)

Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.

The heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken. As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden.

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

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

Please refer to section (ix) above. The preferred location is the only location assessed. It should be noted that prospecting is a "locality bound" industry (it has to take place where the resources are) thus no alternative locations for prospecting can be assessed. No infrastructural components relevant to the project that are not locality bound other than the site camp is applicable. It should be noted the initial layout was revised to avoid sensitive areas such as wetlands and drainage lines as well as heritage sites (refer to Figures 6 above). The CBA in the western part of the site could not be avoided as the mineralisation along the

dolomite/shale contact in this area needs to be tested. However, it should be noted that according to the Ecological Assessment, this area has been degraded by livestock farming. Thus based on the small footprint of the drill holes and trenches and the degradation of the site, it was not deemed necessary to move these holes from an ecological perspective.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

- a) Details of the EAP,** (Confirm that the requirement for the provisions of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

The requirement for the provision of the details and expertise of the EAP are included in PART A, Section 1(a). Refer to Appendix 1 for a comprehensive CV.

- b) Description of the Aspects of the Activity** (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1) (h) herein as required).

The requirement for this provision is included in PART A, Section 1(h).

c) Composite Map

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

Refer to Appendix 6

d) Description of Impact management objectives including management statements

- i) Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)

The closure objectives provided below are to ensure that the closure of the site is compliant with the legislature and that the environment will be left in a state which is sustainable and not harmful. Closure objectives include but are not limited to the following:

- To ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002 as amended.
- To ensure that the prospecting footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment.
- To ensure that the goals which were specified in the rehabilitation section of this report have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with proposed prospecting are eliminated or minimized to acceptable standards.
- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighbouring communities.

The objective of closure and rehabilitation for this area will be to leave the area in a functional state and returned to its pre-prospecting condition i.e. agricultural land (mostly livestock grazing).

ii) Volumes and rate of water use required for the operation

Approximately 5000 litres of water will be required per day. Water may be abstracted from boreholes or other water resources onsite. The necessary discussion will be undertaken with DWS to determine if a WUA will be required.

iii) Has a water use licence been applied for?

A Water Use Authorisation (WUA) has not been applied for. This is based on the limited amount of water required, and the current uncertainty if water will need to be abstracted from boreholes and/or other water resources onsite. As far as is practically possible, this will not take place, however should it be required the necessary discussion will be undertaken with DWS to determine if a WUA will be required. Prospecting activities will not be conducted within 100 m of a watercourse or drainage line or within any wetlands or 500 m of any wetlands.

iv) Impacts to be mitigated in their respective phases

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

ACTIVITIES	PHASE	SIZE AND SCALE OF disturbance	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>E.g For Prospecting – drill site, site camp, ablution facility, accommodation, equipment storage, sample storage , site office, access route etc. etc. etc</p> <p>E.g. For Mining – excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors etc. etc etc...)</p>	<p>(of operation in which activity will take place.</p> <p>State: planning and design, Pre construction, construction, operational, rehabilitation, closure, Post closure).</p>	<p>(volumes, tonnages and hectares or M²</p>	<p>(describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>(A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required.</p> <p>With regards to Rehabilitation specifically this must take place at the earliest opportunity. With regards to Rehabilitation therefore state either...</p> <p>Upon cessation of the individual activity</p> <p>Or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be</p>
<p>ERECTION OF THE SITE CAMP (NO OTHER PHYSICAL INFRASTRUCTURE SUCH AS ROADS ARE ANTICIPATED FOR THE PROPOSED DEVELOPMENT)</p>					
<p>Fauna and Flora – Clearance of vegetation which may result in disturbance of faunal habitats</p>	<p>Construction</p>	<p>1 ha</p>	<ul style="list-style-type: none"> • • The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint. • Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible. • The contractor/applicant must monitor vegetation clearing on site. Only demarcated areas for drilling and trenching must be cleared to the minimum required for access and adjacent and/or other areas must not be disturbed. 	<ul style="list-style-type: none"> • NEMA • MPRDA • NEM: Biodiversity Act • National Forest Act • NEM: Protected Areas Act • Conservation of Agricultural Resources Act 	<p>Throughout the course of the activity.</p>

- | | | | | | |
|--|--|--|---|--|--|
| | | | <ul style="list-style-type: none">• No firewood harvesting must be allowed.• Fires must not be made on site. Cooking should only be allowed on gas-stoves at designated areas.• Hunting must not be allowed on site.• Cigarette butts must not be disposed of in the field.• Should any protected tree or plant species be found on site, they must be avoided and a safe buffer (10-15 m) distance placed around them. If for any reason they cannot be avoided, the relevant permits must be applied for prior to removal.• Vehicles must remain on approved tracks.• The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough.• The prospecting footprint must avoid identified floral SCC as much as practically possible.• Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction.• The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly.• Aquatic features identified on site must be avoided.• The contractor and staff must be made aware of these "No-Go" areas.• The contractor/applicant must monitor for encroachment within these areas.• The Alien Vegetation Rehabilitation and Management Plan must be implemented. | | |
|--|--|--|---|--|--|

			<ul style="list-style-type: none"> • The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly. • All temporarily impacted areas must be rehabilitated back to their original condition. • Only topsoil from the immediate area must be used for rehabilitation. • All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan. 		
Air Quality - Dust creation due to vegetation clearance	Construction	1 ha	<ul style="list-style-type: none"> • Dust abatement by wetting down exposed areas as a result of the construction of the site camp. 	<ul style="list-style-type: none"> • NEMA • MPRDA • NEM: Air Quality Act 	Throughout the course of the activity.
Surface and Groundwater Pollution – A number of activities associated with the construction phase, such as generation of waste, washing of vehicles and ablutions, are associated with potential contaminants.	Construction	1 ha	<ul style="list-style-type: none"> • Oils and fuel must be stored in areas with an impermeable surface to avoid spillages. • Vehicle repairs, servicing and washing must be done off-site. • Where it is necessary to service or repair a vehicle or item of plant in the field drip trays / plastic tarps must be used to catch drips, spills and leaks. • Spill kits must be available on-site, and spills must be cleaned up immediately in accordance with an established protocol appropriate to the material in question. • An emergency plan for spillages must be in place. • Stockpiles should not be higher than the 2 m height restriction. • Keep equipment and vehicles within the limits of the already disturbed areas, where possible. • Rehabilitation of the affected landscape must commence as soon as possible once the site camp is no longer required. 	<ul style="list-style-type: none"> • NEMA • MPRDA • National Water Act • Hazardous Substances Act 	Throughout the course of the activity.

Environmental training	Construction	1 ha	<ul style="list-style-type: none"> • All site personnel should have a basic level of environmental awareness training. Topics covered should include; <ul style="list-style-type: none"> ○ What is meant by “Environment” ○ Why the environment needs to be protected and conserved ○ How construction activities can impact on the environment ○ What can be done to mitigate against such impacts ○ Awareness of emergency and spills response provisions ○ Social responsibility during construction of the camp site e.g. being considerate to local residents ○ The need for a “clean site” policy also needs to be explained to the workers. 	<ul style="list-style-type: none"> • NEMA • MPRDA 	Prior to construction
Noise Pollution – Mainly as a result of vehicle movements on site			<ul style="list-style-type: none"> ○ All work should be limited to daylight hours, i.e. between 6am and 6pm, unless otherwise agreed upon with landowners. 	<ul style="list-style-type: none"> • NEMA • MPRDA • South Africa - GNR.154 of January 1992: Noise control regulations in terms of section 25 of the Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989). • South Africa - GNR.155 of 10 January 1992: Application of noise control regulations made under section 25 of the Environment Conservation Act, 1989 (Act No. 73 of 1989). 	Throughout the course of the activity.

				<ul style="list-style-type: none"> • South Africa - SANS 10103:2008 Version 6 - The measurement and rating of environmental noise with respect to annoyance and to speech communication. • South Africa - SANS 10210:2004 Edition 2.2 – Calculating and predicting road traffic noise. • South Africa - SANS 10357:2004 Version 2.1 - The calculation of sound propagation by the Concawe method. 	
Waste pollution – Domestic waste produced by workers	Construction	1 ha	<ul style="list-style-type: none"> • Scavenger proof bins must be made available to avoid windblown litter. • Bins should be emptied on a regular basis. • Domestic waste must be removed from site - no burying or burning of domestic waste must be allowed. • Enviro-loo ablution facilities should be serviced regularly. 	NEMA MPRDA NEM: Waste Act	Throughout the course of the activity.
Soils – Soil erosion and pollution due to exposed areas not being managed, leaks or spillages from ablution facilities	Construction	1 ha	<ul style="list-style-type: none"> • Oils and fuel must only be stored in areas with an impermeable surface to avoid spillages. • Any spillages which may occur should be investigated and immediate action must be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, this must be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil must be 	<ul style="list-style-type: none"> • NEMA • MPRDA • NEM: Waste Act • Hazardous Substances Act 	Throughout the course of the activity.

			<p>excavated and disposed at a suitably licensed and registered landfill.</p> <ul style="list-style-type: none"> • Stormwater runoff in and around the camp site should be controlled. • Equipment and vehicles should be kept within the limits of the already disturbed areas, where possible. • Erosion control measures (i.e. silt fences) should be applied in areas that have high risk for erosion. 		
Fire Prevention	Construction	1 ha	<ul style="list-style-type: none"> • The Drilling Contractor must have fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process. • No fires must be permitted on site. Cooking must only be allowed on gas-stoves at designated areas. 	<ul style="list-style-type: none"> • NEMA • MPRDA • Occupational Health and Safety Act 	Throughout the course of the activity.
Erosion	Construction	1 ha	<ul style="list-style-type: none"> • Wind screening and stormwater control should be undertaken to prevent soil loss from the site. • All erosion control mechanisms should be regularly maintained. • Re-vegetation of disturbed surfaces must occur immediately after the construction and prospecting activities have been completed. • Rehabilitation should be undertaken progressively 	<ul style="list-style-type: none"> • NEMA • MPRDA 	Throughout the course of the activity.
Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles	Construction	1 ha	Visual impacts will be of a temporary nature and unfortunately cannot be mitigated.	<ul style="list-style-type: none"> • NEMA • MPRDA 	Throughout the course of the activity.

Cultural and Heritage Artefacts	Construction	1 ha	<ul style="list-style-type: none"> • Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA must be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA must be followed. • The Contractor should ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. • Any discovered artefacts must not be removed under any circumstances. Any damage to or destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted. • Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6) 	<ul style="list-style-type: none"> • NEMA • MPRDA • National Heritage Resources Act 	Prior to the construction phase
--	--------------	------	--	--	---------------------------------

			<ul style="list-style-type: none"> • Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences. • This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken. • As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden. 		
<p>Livestock – due to disturbance by noise and vibration from vehicle traffic.</p>	Construction	1 ha	<ul style="list-style-type: none"> • Landowners and Land occupiers should be informed of the planned dates of construction activities. • Site activities should be restricted to daylight hours between 6am and 6pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon. 	<ul style="list-style-type: none"> • NEMA • MPRDA 	Throughout the course of the activity.

- The camp site must not be constructed within 100 m of livestock pens, or any wetlands and drainage lines and their regulatory buffers.

PROSPECTING (OPERATIONAL) PHASE: DRILLING AND TRENCHING

<p>Environmental training</p>	<p>Operation</p>	<p>0.65 ha</p>	<ul style="list-style-type: none"> • All site personnel should have a basic level of environmental awareness training. Topics covered should include; <ul style="list-style-type: none"> ○ What is meant by “Environment” ○ Why the environment needs to be protected and conserved ○ How construction activities can impact on the environment ○ What can be done to mitigate against such impacts ○ Awareness of emergency and spills response provisions ○ Social responsibility during construction of the camp site e.g. being considerate to local residents ○ The need for a “clean site” policy also needs to be explained to the workers. 	<ul style="list-style-type: none"> • NEMA • MPRDA 	<p>Prior to construction</p>
<p>Air quality – dust creation due to vehicle movement, drilling and bulk sampling</p>	<p>Operation</p>	<p>0.65 ha</p>	<ul style="list-style-type: none"> • Dust abatement by wetting down exposed areas, at drill sites and trenches will be required. • Vehicles will stay on the approved or available tracks as far as practically possible. • Low speed limits will be set to avoid the creation of dust ($\leq 40\text{km/hr}$). • All the equipment and vehicles will be equipped with the manufactures stock standard exhaust systems which will minimise the amount of emissions from their engines. • No burning of waste will be allowed on site. 	<ul style="list-style-type: none"> • NEMA • MPRDA • NEM: Air Quality Act 	<p>Throughout the course of the activity.</p>

			<ul style="list-style-type: none"> • Fire extinguishers and other fire safety equipment will be available on site. • Drilling and trenching locations, as set out by the final layout plan and as discussed with the relevant landowners and/or land occupiers will be adhered to. • Excavations and other clearing activities will only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas. • Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Project Geologist and Drilling Contractor. • All areas will be rehabilitated immediately upon completion of work conducted. 		
<p>Noise pollution – vehicle movement, use of drill rigs and excavation machinery</p>	Operation	0.65 ha	<ul style="list-style-type: none"> • The activities will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislations and local by-laws regarding noise control. • Employees will be supplied with ear plugs. All prospecting vehicles will be maintained in a road worthy condition. • All work will be limited to daylight hours, i.e. between 6 am and 6 pm, unless otherwise agreed upon with landowners. 	<ul style="list-style-type: none"> • NEMA • MPRDA • South Africa - GNR.154 of January 1992: Noise control regulations in terms of section 25 of the Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989). • South Africa - GNR.155 of 10 January 1992: Application of noise control regulations made under section 25 of the Environment Conservation Act, 	Throughout the course of the activity.

				<p>1989 (Act No. 73 of 1989).</p> <ul style="list-style-type: none"> • South Africa - SANS 10103:2008 Version 6 - The measurement and rating of environmental noise with respect to annoyance and to speech communication. • South Africa - SANS 10210:2004 Edition 2.2 – Calculating and predicting road traffic noise. • South Africa - SANS 10357:2004 Version 2.1 - The calculation of sound propagation by the Concawe method. 	
Waste pollution – domestic waste produced by workers	Operation	0.65 ha	<ul style="list-style-type: none"> • Scavenger proof bins will be made available to avoid windblown litter. • Bins will be emptied on a regular basis. • Domestic waste to be removed from site - no burying or burning of domestic waste will be allowed. • Enviro-loo ablution facilities will be regularly serviced. 	<ul style="list-style-type: none"> • NEMA • MPRDA • NEM: Waste Act 	Throughout the course of the activity.
Water pollution (Surface and groundwater, wetlands and water bodies) – due to possible spillages, leaks from vehicles or ablution facilities	Operation	0.65 ha	<ul style="list-style-type: none"> • Prospecting activities will not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands. • Enviro-loo ablution facilities will not be placed within 100 m of any water body. • All storage tanks (if any) containing hazardous materials will be placed in bunded containment areas with sealed surfaces. 	<ul style="list-style-type: none"> • NEMA • MPRDA • National Water Act • Hazardous Substances Act 	Throughout the course of the activity.

			<ul style="list-style-type: none"> • The bund wall must be high enough to contain 110% of the total volume of the stored hazardous material with an additional allocation for potential high runoff stormwater events. • Any hazardous substances will be stored at least 100 m from any of the water bodies on site. • Contaminated wastewater will be managed by the Contractor to ensure existing water resources on the site are not contaminated. • An emergency plan for spillages must be in place. 		
<p>Soils – soil erosion and pollution due to exposed areas not being managed, leaks or spillages from ablution facilities</p>	Operation	0.65 ha	<ul style="list-style-type: none"> • Dust abatement by wetting down exposed drill and trenching sites will be required. • Stockpiles will not be higher than the 2 m height restriction. • The use of drip trays under drilling and excavation equipment to ensure no spillage of oils and fuels onto the ground surface. • Oils and fuel will be stored in areas with an impermeable surface to avoid spillages. • Any spillages which may occur will be investigated and immediate action will be taken. In the event of significant spills (in excess of 35 litres) of any hazardous substance, this will be recorded and reported to the environmental personnel, Department of Water and Sanitation, DMR and any other relevant authorities. In such cases the contaminated soil will be excavated and disposed at a suitably licensed and registered landfill. 	<ul style="list-style-type: none"> • NEMA • MPRDA • NEM: Waste Act • Hazardous Substances Act 	Throughout the course of the activity.

			<ul style="list-style-type: none"> • Stormwater runoff in and around drill holes and trenches will be controlled. • Keep equipment and vehicles within the limits of the already disturbed areas if at all possible. • Apply erosion control measures (i.e. silt fences) in areas that have high risk for erosion. 		
<p>Fauna and Flora – due to uncontrolled vehicle movement or improper rehabilitation</p>	Operation	0.65 ha	<ul style="list-style-type: none"> • The prospecting footprint must be surveyed and demarcated prior to prospecting activities commencing to ensure that there is no unnecessary loss of natural vegetation outside the approved footprint. • Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and revegetation must be undertaken as soon as practically possible. • The contractor/applicant must monitor vegetation clearing on site. Only demarcated areas for drilling and trenching must be cleared to the minimum required for access and adjacent and/or other areas must not be disturbed. • No firewood harvesting must be allowed. • Fires must not be made on site. Cooking should only be allowed on gas-stoves at designated areas. • Hunting must not be allowed on site. • Cigarette butts must not be disposed of in the field. • Should any protected tree or plant species be found on site, they must be avoided and a safe buffer (10-15 m) distance placed around them. If for any reason they cannot be 	<ul style="list-style-type: none"> • NEMA • MPRDA • NEM: Biodiversity Act • National Forest Act • NEM: Protected Areas Act • Conservation of Agricultural Resources Act 	Throughout the course of the activity.

			<p>avoided, the relevant permits must be applied for prior to removal.</p> <ul style="list-style-type: none">• Vehicles must remain on approved tacks.• The Applicant must ensure that the contractor and staff are made aware of potential floral SCC on site, as identified during the initial walkthrough.• The prospecting footprint must avoid identified floral SCC as much as practically possible.• Where this is not possible the contractor/applicant must ensure that the relevant permits are obtained prior to destruction.• The contractor/applicant must monitor for the presence of floral SCC, and advise accordingly.• Aquatic features identified on site must be avoided.• The contractor and staff must be made aware of these “No-Go” areas.• The contractor/applicant must monitor for encroachment within these areas.• The Alien Vegetation Rehabilitation and Management Plan must be implemented.• The contractor/applicant must monitor for the establishment and spread of alien invasive species and advise accordingly.• All temporarily impacted areas must be rehabilitated back to their original condition.• Only topsoil from the immediate area must be used for rehabilitation.• All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan.		
--	--	--	---	--	--

Fire Prevention	Operation	0.65 ha	<ul style="list-style-type: none"> The Drilling Contractor will have operational fire-fighting equipment available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process. No fires must be permitted on site. Cooking must only be allowed on gas-stoves at designated areas. 	<ul style="list-style-type: none"> NEMA MPRDA Occupational Health and Safety Act 	Throughout the course of the activity.
Erosion	Operation	0.65 ha	<ul style="list-style-type: none"> Wind screening and stormwater control will be undertaken to prevent soil loss from the site. All erosion control mechanisms will be regularly maintained. Re-vegetation of disturbed surfaces will occur immediately after the prospecting activities are completed. Rehabilitation will be undertaken progressively 	<ul style="list-style-type: none"> NEMA MPRDA 	Throughout the course of the activity.
Visual impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles	Operation	0.65 ha	<ul style="list-style-type: none"> Visual impacts will be of a temporary nature and unfortunately cannot be mitigated. 	<ul style="list-style-type: none"> NEMA MPRDA 	Throughout the course of the activity.
Cultural and Heritage Artefacts	Operation	0.65 ha	<ul style="list-style-type: none"> Local museums as well as the South African Heritage Resource Agency (SAHRA) and the PHRA will be informed if any artefacts are uncovered in the affected area and mitigation measures recommended by SAHRA will be followed. The contractor will ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the ECO so that appropriate action can be taken. 	<ul style="list-style-type: none"> NEMA MPRDA National Heritage Resources Act 	Prior to the construction phase

- | | | | | | |
|--|--|--|---|--|--|
| | | | <ul style="list-style-type: none">• Any discovered artefacts will not be removed under any circumstances. Any destruction of a site can only be allowed once a permit is obtained and the site has been mapped and noted.• Whenever possible, all heritage sites identified during this study with a significance of Medium and Higher, must be preserved in situ by designing the development footprints in such a way that a buffer area of at least 50m is kept clear between any development footprints and construction activities and these heritage sites. In cases where the preservation of such sites and buffer areas are not possible, site-specific mitigation measures would be required (see below). Please note that all sites have been moved as per this recommendation (refer to Figure 6)• Although some sites were identified away from the development footprints, the focus during the fieldwork was almost exclusively placed on these development footprints made up of proposed drill sites and trenches. Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist / archaeologist before construction commences.• This heritage impact assessment report is for proposed drill sites and trenches only. Should the project proceed into mining, a new heritage impact assessment will have to be undertaken. | | |
|--|--|--|---|--|--|

			<ul style="list-style-type: none"> As far as palaeontological heritage is concerned, it is advised that a professional palaeontologist is called in once after the trenching process is completed and fresh bedrock is exposed in order to record potential stromatolitic occurrences if planned trenching is going to exceed widths and depths of >1m into unweathered/fresh bedrock where the latter starts below the superficial soil overburden. 		
<p>Livestock – due to disturbance by noise and vibration from vehicle traffic and drilling and excavation activities.</p>	Operation	0.65 ha	<ul style="list-style-type: none"> Landowners and/or land occupiers will be informed of the planned dates of the prospecting activities. Site activities will be restricted to daylight hours between 6 am and 6 pm and as per the agreement with the landowner/s and/or land occupiers, unless otherwise agreed upon. Drilling and trenching must not be constructed within 100 m of livestock pens, or any wetlands and drainage lines and their regulatory buffers. 	<ul style="list-style-type: none"> NEMA MPRDA 	Throughout the course of the activity.
DECOMMISSIONING/ REHABILITATION PHASE					
<p>Fauna and Flora – due to uncontrolled vehicle movement or improper rehabilitation</p>	Decommissioning	1.65 ha	<ul style="list-style-type: none"> The Alien Vegetation Rehabilitation and Management Plan must be implemented. The contractor/applicant must ensure adequate effort has been taken to reduce the spread of alien invasive species at closure. All temporarily impacted areas must be rehabilitated back to their original condition. Only topsoil from the immediate area must be used for rehabilitation. All temporarily impacted areas must be restored as per the Rehabilitation and Erosion Management Plan. A suitably qualified individual/botanist should conduct a 	<ul style="list-style-type: none"> NEMA MPRDA NEM: Biodiversity Act National Forest Act NEM: Protected Areas Act Conservation of Agricultural Resources Act 	Throughout the course of the activity.

			closure audit to ensure rehabilitation has been undertaken in a satisfactory manner.		
Land degradation – due to improper site clean-up	Decommissioning	1.65 ha	<ul style="list-style-type: none"> All waste bins and domestic waste will be removed from site once the activity is complete. Excess topsoil not used in rehabilitation will be levelled. All temporary and sampling equipment (i.e. waste bins, Enviro-loo ablution facilities, sample bags etc.) used during prospecting and rehabilitation will be removed from site. The site will be cleared of all litter. Final inspection in order to ensure adherence to EMPr guidelines, in regards to the completion of localized / remaining areas of impact, monitoring of rehabilitation success, etc. 	<ul style="list-style-type: none"> NEMA MPRDA NEM: Waste Act 	Throughout the course of the activity.
SOCIO-ECONOMIC					
Increase Traffic - During prospecting 4x4 vehicles will be utilising the existing road network. This may result in damage to the existing roads and tracks.	Construction Operation Decommissioning	1.65 ha	<ul style="list-style-type: none"> Speed limits will not exceed 40km/h on farm roads and tracks. <p>All drivers will be made aware of the procedures to be followed if an accident occurs.</p>	<ul style="list-style-type: none"> NEMA MPRDA Occupational Health and Safety Act 	Throughout the course of the activity.
Nuisance (Air and Noise) - Impacts on air quality will primarily result from increased dust levels associated with the required drilling and trenching activities and associated traffic on farm roads. It is anticipated that there will be an increase in noise levels during prospecting which will be associated with the operation	Construction Operation Decommissioning	1.65 ha	<ul style="list-style-type: none"> The activities will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable noise regulations and local by-laws regarding noise control. All prospecting vehicles will be maintained in a road worthy condition. All work will be limited to daylight hours, i.e. between 6 am and 6 pm, 	<ul style="list-style-type: none"> NEMA MPRDA NEM: Air Quality Act South Africa - GNR.154 of January 1992: Noise control regulations in terms of section 25 of the Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989). 	Throughout the course of the activity.

of vehicles and sampling equipment.			<p>unless otherwise agreed upon with landowners and/or land occupiers.</p> <ul style="list-style-type: none"> • Vehicles will stay on existing / approved tracks / roads, as far as practically possible. • Low speed limits will be set on access roads to avoid the creation of dust ($\leq 40\text{km/hr}$). • All the equipment and vehicles will be equipped with the manufactures stock standard exhaust systems which will minimise the amount of emissions from their engines. • No burning of waste will be allowed on site. • Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Project Geologist, Site manager and or ESO/ECO. <p>All areas will be rehabilitated immediately upon completion of work conducted.</p>	<ul style="list-style-type: none"> • South Africa - GNR.155 of 10 January 1992: Application of noise control regulations made under section 25 of the Environment Conservation Act, 1989 (Act No. 73 of 1989). • South Africa - SANS 10103:2008 Version 6 - The measurement and rating of environmental noise with respect to annoyance and to speech communication. • South Africa - SANS 10210:2004 Edition 2.2 – Calculating and predicting road traffic noise. • South Africa - SANS 10357:2004 Version 2.1 - The calculation of sound propagation by the Concawe method. 	
Water pollution (Surface and groundwater sources , wetlands and drainage lines) – due to possible spillages and/or leaks from vehicles or temporary ablution facilities (i.e. enviro-loo)	Construction Operation Decommissioning	1.65 ha	<ul style="list-style-type: none"> • Enviro-loo ablution facilities will not be placed within 100 m of any water body. • Prospecting activities will not be conducted within 100 m of a drainage line or within 500 m of NFEPA (desktop) identified wetlands. • Oils and fuel must be stored in areas with an impermeable surface to avoid spillages. 	<ul style="list-style-type: none"> • NEMA • MPRDA • National Water Act • Hazardous Substances Act 	Throughout the course of the activity.

			<ul style="list-style-type: none"> • Vehicle repairs, servicing and washing must be done off-site, as far as practically possible. • Where it is necessary to service or repair a vehicle or item of plant in the field drip trays / plastic tarps must be used to catch drips, spills and leaks. • Spill kits must be available on-site, and spills must be cleaned up immediately in accordance with an established protocol appropriate to the material in question. <p>An emergency plan for spillages must be in place.</p>		
<p>Visual Impact – may impact on surrounding land uses where visitors value the undisturbed / untransformed characteristics of the general region and due to the visibility of vehicles.</p>	<p>Construction Operation Decommissioning</p>	<p>1.65 ha</p>	<p>Visual impacts will be of a temporary nature and unfortunately cannot be mitigated.</p>	<ul style="list-style-type: none"> • NEMA • MPRDA 	<p>Throughout the course of the activity.</p>
<p>Economic - According to the Integrated Development Plan (IDP) of the local municipality the unemployment rate is currently at 51%. Many 'poverty gaps' exist, with settlements in the nearby towns. Therefore, depending on the number of employment opportunities to be created, the project could have a positive impact in terms of employment.</p>	<p>Construction Operation Decommissioning</p>	<p>1.65 ha</p>	<ul style="list-style-type: none"> • Local labour and service companies will be used where possible. <p>Prospecting Rights do not supersede property rights hence the applicant will comply with all reasonable requirements to minimize the impact of prospecting on landowners, land occupiers and agricultural activities.</p>	<ul style="list-style-type: none"> • NEMA • MPRDA 	<p>Throughout the course of the activity.</p>

e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraphs above):

ACTIVITIES	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
E.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors etc. etc etc..	(e.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc etc..)		In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post closure)	(modify, remedy, control or stop) Through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.. E.g. <ul style="list-style-type: none"> • Modify through alternative method • Control through noise control • Control through management and monitoring • Remedy through rehabilitation 	(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Site Camp	Refer to Table (iv) above for impacts rated.	Environmental and Social (Landowners and Land Occupiers)	Construction	Refer to Table (iv) above for all mitigation measures related to the site camp	Adhere to all relevant legislation as outlined in Table (iv) above
Drilling and Trenching	Refer to Table (iv) above for impacts rated.	Environmental and Social (Landowners and Land Occupiers)	Operation	Refer to Table (iv) above for all mitigation measures related to drilling and trenching	Adhere to all relevant legislation as outlined in Table (iv) above
Closure and Rehabilitation	Refer to Table (iv) above for impacts rated.	Environmental and Social (Landowners and Land Occupiers)	Decommissioning	Refer to Table (iv) above for all mitigation measures related to site closure	Adhere to all relevant legislation as outlined in Table (iv) above

f) Impact Management Actions

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

ACTIVITY Whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablutions, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines , conveyors etc. . etc.)	POTENTIAL IMPACT (E.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc. etc...)	MITIGATION TYPE (modify, remedy, control or stop) Through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc.. E.g. <ul style="list-style-type: none"> • Modify through alternative method • Control through noise control • Control through management and monitoring Remedy through rehabilitation	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regards to Rehabilitation specifically this must take place at the earliest opportunity. With regards to Rehabilitation therefore state either... Upon cessation of the individual activity Or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practises that have been identified by Competent Authorities)
Site Camp	Refer to Table (iv) above for impacts rated.	Refer to Table (iv) above for all mitigation measures related to the site camp	Throughout the course of the activity.	Adhere to all relevant legislation as outlined in Table (iv) above
Drilling and Trenching	Refer to Table (iv) above for impacts rated.	Refer to Table (iv) above for all mitigation measures related to drilling and trenching	Throughout the course of the activity.	Adhere to all relevant legislation as outlined in Table (iv) above
Closure and Rehabilitation	Refer to Table (iv) above for impacts rated.	Refer to Table (iv) above for all mitigation measures related to site closure	Throughout the course of the activity.	Adhere to all relevant legislation as outlined in Table (iv) above

i) Financial Provision

(1) Determination of the amount of Financial Provision

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

The closure objectives provided below are to ensure that the closure of the site is compliant with the legislature and that the environment will be left in a state which is sustainable and not harmful. Closure objectives include but are not limited to the following:

- To ensure closure complies with the Mineral and Petroleum Resources Development Act 28 of 2002 as amended.
- To ensure that the prospecting footprints are rehabilitated to an acceptable standard, where there is ecosystem functioning and that all environmental and social risks have been reduced and do not pose any threat to the environment.
- To ensure that the goals which were specified in the rehabilitation section of this report have been met and that the land may have a sustainable use.
- To implement management strategies that will ensure that the negative impacts (risks) associated with proposed prospecting are eliminated or minimized to acceptable standards.
- To leave the area in a manner that is environmentally safe and does not pose any health risks to the neighbouring communities.

The objective of closure and rehabilitation for this area will be to leave the area in a functional state and returned to its pre-prospecting condition i.e. agricultural land.

The extent of the proposed site is 10,036 hectares. Based on the anticipated amount of drill holes and trenches and the construction of a site camp, the total area to be disturbed equates to approximately 0.016 % (1.65 ha) of the total extent of the affected properties. This includes the drill hole and trench disturbance area of 0.65 ha and the site camp of 1 ha (maximum area).

Rehabilitation is a key mitigation action to reduce many of the impacts on the natural environment. A rehabilitation programme has been prepared as part of the Draft EMPr in the relevant sections below. The objective of rehabilitation for this area will be to leave the area in a functional state and returned to its pre-prospecting condition i.e. agricultural land.

Rehabilitation will be conducted in a progressive manner: All drill sites will be surveyed and backfilled on an ongoing basis as they are completed. The rehabilitation of drill sites would take the form of limited manual raking to open and flatten the surface area and very limited, targeted seeding of plants if the area is not in a disturbed area. The rehabilitation of the bulk sample site will entail backfilling the site with the excavated material. No tailings will be deposited in the bulk sample pit as processing will be done off-site. No other waste will be deposited in the excavation. Once the bulk sample pit has been filled with the overburden, it will be profiled with acceptable contours and erosion control measures will be implemented. Thirty centimetres (30 cm) of seed bearing top soil (previously stockpiled) will simply be spread over the exposed surface. Generally re-vegetation will begin naturally when top soil is spread and seeds in the seed bank germinate, but various additional activities, described in the rehabilitation sections below, will be undertaken to facilitate the rehabilitation process.

The objective of closure and rehabilitation for this area will be to leave the area in a functional and acceptable state. The implementation of effective rehabilitation will ensure that the site is returned to an acceptable state. The rehabilitation of the bulk sample pit will be done in such

a manner that the pit is backfilled, contoured and reshaped to be acceptable and with the least visual intrusion.

The extent of the proposed site is approximately 8 681 hectares. Based on the anticipated area of the bulk sample, the total area to be disturbed equates to approximately 0.009 % (0.74ha) of the total extent of the affected properties. This includes the bulk sample site of 0.64 ha and the topsoil storage area of 0.1 ha (maximum area).

Rehabilitation is a key mitigation action to reduce many of the impacts on the natural environment. A rehabilitation programme has been prepared as part of the Draft EMPr in the relevant sections below.

Rehabilitation will be conducted in a progressive manner: All drill sites and trenches will be surveyed and backfilled on an ongoing basis as they are completed. The rehabilitation of drill sites would take the form of limited manual raking to open and flatten the surface area and very limited, targeted seeding of plants if the area is not in a disturbed area. The rehabilitation of the trenches will entail backfilling the site with the excavated material (soil and rock), before topsoil is replaced. The surface is left slightly mounded to allow for subsidence. Trenches will be inspected and photographed prior to and after excavation. Generally re-vegetation will begin naturally when top soil is spread and seeds in the seed bank germinate.

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

This report will be made available to all identified I&APs for review and comment. Comments and concerns will be recorded and incorporated in the Final BAR and EMPr that will be submitted to the DMR on 23 November 2018. PPP to date has been included in Appendix 2.

- c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.**

The main purpose of rehabilitation is to minimize and remediate the negative impacts which were caused by prospecting. All efforts will be made to rehabilitate the affected areas. This will mean that drill holes and trenches will be backfilled, areas where vegetation was removed will be re-vegetated, any piling of drill material will be removed from site, any stockpiled soil will be returned back to where it was excavated and any fuel and oil leaks cleaned. All efforts will be made to rehabilitate the land to a quality of the same if not better than prior to the commencement of prospecting.

Rehabilitation process

Rehabilitation of impacted areas will involve the following process.

1. Removal of all equipment from the site and cleaning of any litter related to the prospecting activities.
2. Backfill drill holes and trenches with excavated material.
3. Removal/spreading of all excess excavated soil and topsoil.
4. Re-vegetation.

Removal of all equipment from the site.

All equipment used during prospecting must be removed from the site. This includes vehicles, temporary structures, drill rigs, excavators etc.

Backfill drill holes and trenches.

All drill sites and trenches will be surveyed and backfilled on an ongoing basis as they are completed. The rehabilitation of drill sites would take the form of limited manual raking to open and flatten the surface area and very limited, targeted seeding of plants if the area is not in a disturbed area. The rehabilitation of the trenches will entail backfilling the site with the excavated material (soil and rock), before topsoil is replaced. The surface is left slightly mounded to allow for subsidence. Trenches will be inspected and photographed prior to and after excavation. Generally re-vegetation will begin naturally when top soil is spread and seeds in the seed bank germinate.

Removal/spreading of all excess excavated soil and topsoil.

Once the drill holes and trenches have been backfilled, thirty centimetres (30 cm) of seed bearing top soil (previously stockpiled) will simply be spread over the exposed. Any unused soil must be disposed of at a registered waste disposal facility.

Re-vegetation

The re-vegetation process will not only focus on the rehabilitation of the drill holes and trenches but includes all exposed soil, transformed areas and areas where alien invasive plant species have been removed within the site caused as a result of the prospecting activities as well as the area disturbed as a result of the construction of the camp site. Indigenous grass species, may be incorporated into these areas to create initial cover, should this be required.

In order to rehabilitate impacted areas the following landscaping techniques will be employed:

- Mulch is to be harvested from areas that are to be denuded of vegetation during prospecting activities, provided that they are free of seed-bearing alien invasive plants;
- No harvesting of indigenous vegetation may be done outside the area to be disturbed by prospecting activities.
- The Contractor shall ensure that all weeds and alien/invasive species cleared for prospecting activities are removed from site.
- The areas where alien vegetation must be removed consists of areas within the demarcated development footprint.
- Soil stockpiles during the preparation phase should be placed in such a manner that natural drainage patterns are not disrupted (i.e. no stockpiles should be located in or adjacent to any seepage or drainage areas).
- No imported soil material should be used, unless it can be ensured that it is free of exotic and alien vegetation seeds;
- Where necessary, appropriate dust suppression techniques should be employed, such as regular watering of exposed areas and stockpiles;
- The natural topography of the site must be maintained during and after prospecting (i.e. indiscriminate levelling or elevating of the site must be avoided);
- Appropriate erosion control/ soil stabilisation measures are to be implemented where necessary;
- During the prospecting phase the Contractor shall protect areas susceptible to erosion by installing necessary temporary and permanent drainage works as soon as possible and by taking other measures necessary to prevent the surface water from being concentrated in streams and from scouring the slopes, banks or other areas.
- Traffic and movement over stabilised areas is to be restricted and controlled, and damage to stabilised areas shall be repaired and maintained to the satisfaction of the ECO/ESO.
- Do not use any alien species for rehabilitation purposes.

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

Rehabilitation measures have been designed to meet closure objectives as stipulated in various sections of the report.

The objectives of rehabilitation and closure are:

- To ensure that vegetation clearing is done in an appropriate manner.
- To leave the site in a safe state for humans and animals, as it was originally.
- To remove all equipment, excess topsoil and any waste generated.
- To backfill drill holes and trenches adequately.
- Ensure that the water resources are not affected by prospecting or rehabilitation activities.

Access footpaths, roads and tracks

- Ensure all equipment, fuel and waste have been removed from site.
- Place a natural barrier at the junction to the footpath/track/road being rehabilitated e.g. rocks to prevent further access.
- Loosen compacted soil on tracks when tracks are not needed again.
- Seeding to be done where required with appropriate seed.
- Daily site access will occur by the required vehicles.
- As far as possible, existing roads will be used. Consultation with the relevant landowner and/or land occupier will be done where this is not possible.
- No new access roads are anticipated to be constructed, however, should there be a need to establish roads, these will be done in such a way that vegetation clearance is limited, and existing structures such as fence lines are followed as far as possible.
- No fences will be cut and all access gates will be left in their original state.

Drilling and trenching

- Prior to drilling/trenching a photographic record of the site will be established.
- The sites to be drilled / trenched will be selected based on geological information. These locations will be discussed with the relevant landowner and/or land occupier.
- Each drill and trench site will be marked with pegs that will be removed once the activity is complete.
- All areas to be disturbed will be screened for SCCs.
- Vegetation removed must include the 1st upper 30 cm, where possible, of soil and stockpiled (topsoil).
- Topsoil and subsoil will be separated. Topsoil will be used in the rehabilitation phase.
- Since the plant material removed from the site are to be mixed into the topsoil to supplement the organic nutrient content of the soil, no further soil conditioning in terms of fertilising is deemed necessary.
- All cleared invasive alien vegetation will be removed from site.
- If drilling and trenching is required in grazing areas, consultations will be held with the relevant landowners / land-occupiers to discuss consent and compensation.
- Backfilling of drill holes will be done via raking of the suitable material over the disturbed areas. The rehabilitation of the trenches will entail backfilling the site with the excavated material (soil and rock), before topsoil is replaced. The surface is left slightly mounded to allow for subsidence.
- Drill holes will be plugged, capped and marked.
- All litter will be removed from site and the surrounds.
- Severely compacted soil will be loosened / scarified to allow water and seed penetration.
- Enviro-loo ablution facilities will be used and will be removed and the contents disposed of at an approved facility.
- Fires are prohibited on site.

- Photographs of the site and file information with dates and notes when first monitoring needs to be kept on file.

Waste Disposal

- Scavenger proof waste bins will be available for waste disposal.
- All generated waste and litter will be removed from site on a weekly basis or when required.
- Enviro-loo ablution facilities will be outsourced, maintained and serviced on a regular basis by a licenced service provider.
- All spills / leaks will be contained in an appropriate manner and removed from site to a licenced facility.

Rehabilitation

- Prior to rehabilitation of the site, all remnants of foreign debris shall be removed from the site.
- All holes and trenches will be covered first with subsoil and then with topsoil (minimum of 10 cm deep). Topsoil will be spread to the original depth (30 cm where possible).
- As topsoil will contain all cleared vegetation, no additional treatment will be required.
- The soil must cover all the roots and be well firmed down to a level equal to that of the surrounding *in situ* material.
- Control weeds by means of extraction, cutting or other approved methods.
- Monitoring will be undertaken once a month or until rehabilitation has been deemed successful and signed off on by the ECO/ESO.
- Follow up inspections will be conducted every two months to remove upcoming seedlings of alien vegetation.
- A single permanent marker will be required to mark the location of the drill holes and trenches for future reference. The siting of such a marker shall be cleared with the landowner and/or land occupiers.
- All rehabilitation referred to in this environmental management programme will be done concurrent to prospecting operations as set out in the MPRDA. Best practice methods will be used.
- Continuous monitoring of possible soil erosion will be required.

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

A total provision to close out the impacts associated with the prospecting activities amounts to a maximum of R226,040.26 (VAT inclusive). This has been calculated and discussed in Part A, Section(s) as well as Appendix 7 of the report.

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

K2015268783 (South Africa) (Pty) Ltd will provide the indicated financial provision of R226,040.26 (VAT inclusive) for rehabilitation and post-monitoring of the prospecting site which has been included into the total of R17,193,500 required to finance the entire PWP (approved drilling and trenching).

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

- g) Monitoring of Impact Management Actions**
- h) Monitoring and reporting frequency**
- i) Responsible persons**
- j) Time period for implementing impact management actions**
- k) Mechanisms for monitoring compliance**

The following aspects will require monitoring during the active prospecting phase:

- Air pollution
- Noise pollution
- Pollution of soil and erosion
- Surface and Ground Water pollution and stormwater runoff
- Condition of soils (erosion) and vegetation due to removal or damage
- Possible impacts on heritage resources
- Waste management

The following aspects will require monitoring after rehabilitation and closure:

- Rehabilitation

The monitoring and performance of the prospecting activities will be conducted as prescribed in terms of regulation 55 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). Section 38 of the Act is also relevant as far as monitoring of impacts is concerned. This section stipulates that the holder of the prospecting right or permit is required to rehabilitate the land disturbed to its natural state or predetermined condition. Quarterly EMP compliance audits by an ECO/ESO are required. These reports will inform the annual performance assessment that will be submitted to DMR. It is important to note that all environmental damage in the prospecting area will be the responsibility of the permit/rights holder. The continuous monitoring of key environmental indicators throughout the life of the operation will ensure that impacts do not become unmanageable.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	Dust and Noise	Ensure that the prospecting works programme is being implemented in line with the	Daily monitoring will be done by the site manager and geologist during periods of	Daily
	Soil erosion, stability and fertility			Monthly

Vegetation clearance and prospecting activities	Soil contamination and related spills	<p>approved prospecting works programme and EA.</p> <p>Monitoring of the impacts as outlined here must include reporting of the following during periods of active prospecting:</p> <ul style="list-style-type: none"> • Daily Site diary including reporting on Health & Safety, EMP compliance, adherence to speed limits, dust, damage to vegetation, litter, pollution, noise etc. • Monthly reports by the site manager to the ECO/ESO • Quarterly reports by the ECO/ESO to the applicant • Annual reports to DMR 	<p>activity on site, which will in turn report any incidents or issues to the ESO/ECO. It will be ideal to facilitate monthly meetings to ensure that all staff/labourers are aware of job-specific environmental dangers and to educate employees on dealing with various issues that may arise. Where necessary employees will be provided with training.</p> <p>For the purposes of implementing the conditions contained herein, the Developer shall appoint an ECO/ESO for the duration of the contract.</p> <p>The ECO/ESO has the following responsibilities:</p> <ul style="list-style-type: none"> • Ensuring necessary environmental authorisations and permits have been obtained. • Monitoring and verifying that the EMP is adhered to at all times and taking action if the specifications are not followed. • Monitoring and verifying that environmental impacts are kept to a minimum; • Reviewing and approving method statements. 	Weekly
	Waste management			Monthly
	Water pollution			Monthly
	Vegetation establishment during rehabilitation			Monthly until rehabilitation is deemed successful

			<ul style="list-style-type: none">• Assisting the Prospecting Operator/geologist or the person in charge of activities on site in finding environmentally responsible solutions to problems.• Keeping records of all activities/incidents on Site in the Site Diary concerning the environment.• Keeping a register of complaints in the Site Office and recording and dealing with any community comments or issues.• Ordering the removal of person(s) and/or equipment not complying with the specifications.• Issuing of penalties for transgressions of site rules.• Doing daily monitoring during site activity and communicating any issues to the applicant.	
--	--	--	---	--

l) Indicate the frequency of the submission of the performance assessment / environmental audit report.

An annual performance assessment report must be done internally. These reports must be submitted to the DMR.

m) Environmental Awareness Plan

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

All employees will undergo an induction course when they are employed at the prospecting area which will inform them of the environmental issues / risks and requirements prior to work commencing. An annual refresher will be done thereafter. The following aspects of environmental training should be included within the induction course:

- Sustainability
- Environmental goals and manner of achieving these
- SCCs likely to be encountered
- Rehabilitation
- Waste management / minimisation (including recycling)
- Saving water
- Dealing with soil contamination and spillages
- Solutions to environmental risks

The Site manager shall ensure that adequate environmental training takes place. All employees shall be given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in a language understandable by all employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of their work activities;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities;
- The importance of not littering;
- The need to use water sparingly;
- Details of, and encouragement to, minimise the production of waste and re-use, recover and recycle waste where possible;
- Details regarding archaeological and/or historical sites which may be unearthed during construction and the procedures to be followed should these be encountered;
- Details regarding SCCs, including protected/endangered species, and the procedures to be followed should these be encountered during prospecting.

In the case of permanent staff, the Site manager/ESO shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the Site manager shall inform how he intends concluding his environmental training obligations.

Environment and health awareness training programmes should be targeted at three distinct levels of employment, i.e. the executive, middle management and labour. Environmental awareness training programmes should contain the following information:

- The names, positions and responsibilities of personnel to be trained.
- The framework for appropriate training plans.
- The summarised content of each training course.

The ECO/ESO shall monitor the records as listed above.

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

All mitigation and management measures should be covered in the induction training. This will ensure prevention of risky situations during prospecting operation. The compliance to the procedures is the duty of all staff and contractors. This is monitored by supervisors and reported to the management team as well as the ESO/ECO.

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

No specific information was requested from the authorities.

UNDERTAKING

The EAP herewith confirms

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



Signature of the environmental assessment practitioner:

Coastal and Environmental Services (Pty) Ltd., trading as EOH Coastal & Environmental Services

Name of Company:

13 October 2018

Date:

University
of
Port Elizabeth



Universiteit
van
Port Elizabeth

This is to certify that, the
requirements having been
satisfied, the degree of

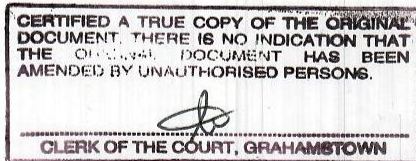
Hiermee word verklaar dat,
nadat aan die vereistes
voldoen is, die graad


Baccalaureus Scientiae

has been conferred upon

toegeken is aan

CHANTEL MINNÉ

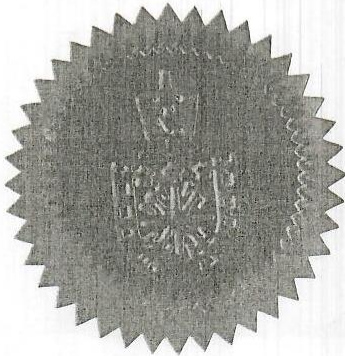



Vice-Chancellor / Vise-Kanselier




Registrar / Registrateur

Port Elizabeth
14 April 2000



University
of
Port Elizabeth



Universiteit
van
Port Elizabeth

This is to certify that, the
requirements having been
satisfied, the degree of

Hiermee word verklaar dat,
nadat aan die vereistes
voldoen is, die graad

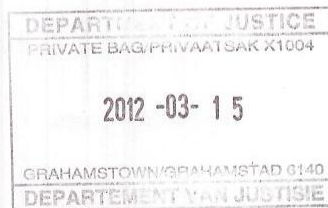
Baccalaureus Scientiae Honores

(Botany / Botanie)

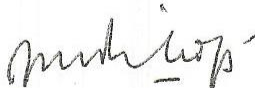
has been conferred upon

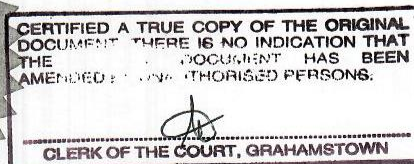
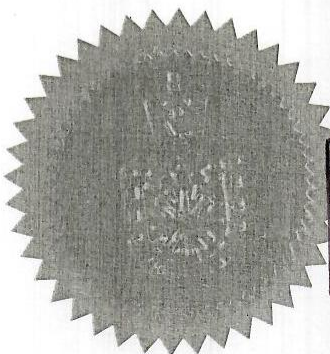
toegeken is aan

CHANTEL MINNIE




Vice-Chancellor / Vice-Kanselier


Registrar / Registrateur



Port Elizabeth
21 April 2001



**Nelson Mandela
Metropolitan
University**

*This is to certify that, all the requirements
having been met, the degree*

Master of Science

Botany

with all the associated rights and privileges, was conferred upon

Chantél Bezuidenhout

ID no.: 7803110017084

at a congregation of the Nelson Mandela Metropolitan University on

Duplicate

23 APRIL 2004

is hereby certified that this is a true copy of the original document and that there is no indication that alterations have been made thereto by an unauthorized person.



Branch Manager: *[Signature]*

Date: 2016-10-21

[Signature]
Vice-Chancellor

[Signature]
Registrar

This degree has been conferred in terms of the rules of the former University of Port Elizabeth
Endorsement: This is a duplicate of the contents of the original certificate which was lost or destroyed
as far as can be determined by the Nelson Mandela Metropolitan University.

13/1037

Folding on this certificate indicates its authenticity.



**Nelson Mandela
Metropolitan
University**

This is to certify that, all the requirements having been met, the degree

Philosophiae Doctor
(Botany)

with all the associated rights and privileges, was conferred upon

Chantel Bezuidenhout

(ID No.: 7803110017084)

at a congregation of the Nelson Mandela Metropolitan University on

13-APRIL-2011

Certificate No.: 20110790

CERTIFIED A TRUE COPY OF THE ORIGINAL DOCUMENT. THERE IS NO INDICATION THAT THE ORIGINAL DOCUMENT HAS BEEN AMENDED BY UNQUALIFIED PERSONS.

CLERK OF THE COURT, GRAHAMSTOWN

[Signature]
Vice-Chancellor



[Signature]
Registrar

CONTACT DETAILS

Name of Company	EOH Coastal & Environmental Services
Designation	Port Elizabeth Branch
Profession	Principal Environmental Consultant and Branch Manager
Years with firm	5.5 years
E-mail	Chantel.bezuidenhout@eoh.co.za c.bezuidenhout@cesnet.co.za
Office number	041 585 1715
Nationality	South African

Key areas of expertise

- Environmental Impact Assessments (including stakeholder engagement such as focus group meetings, meetings with local government officials, etc.)
- Environmental Management Programmes
- Monitoring Programmes
- High Level GHG Emissions Assessments
- Land and Natural Resource Use Assessments (liaising with local communities via focus group meetings in regards to land use, including agriculture, natural resources use, etc.)
- Estuarine Assessments
- Team Leader for land surveys completed for a RAP process in Mozambique
- Rehabilitation Assessments
- Mine Closure Reports

PROFILE

Dr Chantel Bezuidenhout holds MSc and PhD degrees in Botany (estuarine ecology) and a BSc degree in Botany and Geography from NMMU. Chantel has been an Environmental Consultant for approximately 11 years and as such has been focused on environmental management and impact assessment. Chantel is well versed in environmental legislation and has managed a number of environmental impact assessments and management plans for heavy mineral mining in South African and Madagascar, as well as a number of EIAs for open case mines (copper, nickel, graphite) in Zambia and Mozambique. These projects have been completed to international standards (IFC and World Bank), and have been granted authorisation by their host countries. Chantel is also well versed in stakeholder engagement and stakeholder processes, all EIAs that has been managed by Chantel has included community consultations and as such Chantel has been used for various forms of community engagement in rural African settings. Chantel has also been extensively involved in the data collection and report writing for land and natural resource use assessments in both Madagascar and Mozambique. The data gathering component involves expensive community meetings in order to establish land use (including agriculture) and natural resource use within the communities and wider regions. Chantel has recently completed an extensive land survey as part of a Resettlement process for a heavy minerals mine in Mozambique as well as in-kind compensation surveys in Tanzania. She is currently a principal consultant and Branch Manager of the Port Elizabeth Office of EOH CES.

EMPLOYMENT EXPERIENCE

Principal Environmental Consultant, Coastal and Environmental Services

October 2011 - Present

- Project Management
- Report Production (EIR, BAR, EMPr)
- Public Participation, including community meetings, focus group meetings, liaison with government department, etc.
- Specialist Assessments (Estuarine, High Level GHG, Rehabilitation, Mine Closure & Land and Natural Resource Use)
- Team Leader for Land Surveys undertaken as part of the Resettlement Process
- Quality Control

Environmental Consultant, CEN IEM Unit

February 2008 – September 2011

- Project Management
- Report Production (EIR, BAR, EMPr)
- Public Participation

ACADEMIC QUALIFICATIONS

NMMU, Port Elizabeth
PhD
2011

NMMU, Port Elizabeth
MSc
2003

NMMU, Port Elizabeth
BSc Hon
2001

NMMU, Port Elizabeth
BSc
2000

PUBLICATIONS

1. Adams, J.B., Bornman, T.G. and Bezuidenhout, C. 2005. Specialist Report: Macrophytes. Olifants / Doring catchment. Ecological Water Requirements study, Olifants Estuary. Report submitted to CSIR, Environmentek, Stellenbosch. 39pp.
2. Bezuidenhout, C., J.B. Adams and Bornman, T.G. 2005. Specialist Report: Macrophytes. Kromme Estuary Resources Directed Measures Study. Report submitted to the CSIR on behalf of the Department of Water Affairs and Forestry. 61pp.
3. Bornman, T.G., Adams, J.B. and Bezuidenhout, C. 2004. Present status of the Orange River mouth wetland and potential for rehabilitation. Prepared for Working for Wetlands, South African National Biodiversity Institute. Nelson Mandela Metropolitan University. IECM Research Report No. 43. 54 pp.
4. Bornman, T.G., Adams, J.B. and Bezuidenhout, C. 2004. Adaptations of salt march to semi-arid environments and management implications for the Orange River mouth. Transactions of the Royal Society of South Africa 59(2): 125-131.
5. Bornman, T.G., Adams, J.B. and Bezuidenhout, C. 2005. Salt marsh characteristics and freshwater requirements of a cool temperate versus a warm temperate estuary. 12th Southern African Marine Science Symposium. Durban, Kwazulu-Natal.

CONSULTING EXPERIENCE

CEN Integrated Environmental Management Unit:
(2008) Basic Assessment for the proposed establishment of 2 jetties, improvement of the

existing, licensed slipway and stabilization of the river banks on Portion 12 of the Farm Nocton 441 (Gamtoos ferry Hotel). (Port Elizabeth, Eastern Cape Province)

CEN Integrated Environmental Management Unit: (2008) Basic Assessment for the proposed establishment of a Town Lodge Hotel on Erf 2150, Summerstrand. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2008) Basic Assessment for the proposed Rezoning and Subdivision of Erf 10501 and the remainder of Erf 5023, Walmer, Nelson Mandela Metropolitan Municipality, for the purpose of establishing a residential development. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2008) Basic Assessment for the proposed rezoning and the establishment of a hospital and associated infrastructure and facilities on a portion of the remainder of Erf 1226, Fairview, Port Elizabeth, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2008) Basic Assessment for the proposed rezoning of Portion 1 of the Farm Bucklands (No. 108), the Farm SchrikwatersPoort (No. 109) and the remainder of the farm Bucklands (No. 108) for the development of a Luxury Lodge, Makana Municipal Area, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2008) Basic Assessment for the proposed subdivision of Erf 2686, Parsonsvelei for a Residential Development Port Elizabeth, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2008) Basic Assessment for the proposed subdivision of Erf 2687, Parsonsvelei for a Residential Development, Port Elizabeth, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2008) Environmental Assessment for the proposed Rezoning and Subdivision of Portions 22 and 40 of the Farm Witteklip No 466, Nelson Mandela Bay Municipality. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2009) Environmental Assessment for the proposed subdivision of the remainder of Erf 1226, Fairview, Port Elizabeth, Eastern Cape for a Residential Development. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:

(2009) Basic Assessment for the establishment of a new 2.5 MI Kruisfontein Reservoir on Erf 2088 and a portion of the remainder of Erf 2, Humansdorp, Kouga Municipality, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2009) Basic Assessment for the proposed extension of an existing 36m lattice mast to a 46m lattice mast on Erf 8917, Uitenhage, Nelson Mandela Bay Municipality, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2009) Basic Assessment for the proposed extension of an existing 36m lattice mast to a 46m lattice mast of Erf 1296, Summerstrand, Port Elizabeth, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2009) Basic Assessment for the proposed extension of an existing 36m lattice mast to a 56m lattice mast on Erf 1345, Walmer, Port Elizabeth, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2009) Basic Assessment for the proposed rezoning and subdivision of a portion of Erf 1721, Aberdeen, Camdeboo Municipality, Eastern Cape to develop subsidized housing and related community facilities (Lotusville Extension). (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2009) Basic Assessment for the proposed rezoning and subdivision of a portion of Erf 1721, Aberdeen, Camdeboo Municipality, Eastern Cape to develop subsidised housing and related community facilities (Thembalesizwe Extension). (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2009) Basic Assessment for the proposed stabilization of the river banks on Portion 2 of the Farm Nocton 441 (Adjacent to the Gamtoos Ferry Hotel). (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2010) Environmental Impact Assessment for the proposed construction and upgrading of the new Glen Hurd Road as well as the construction of the Baakens River Bridge, Port Elizabeth, Eastern Cape. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit:
(2010) Environmental Impact Assessment for the proposed subdivision of the remainder of Erf 982, Parsonslei, Port Elizabeth, Eastern Cape for a

**INTERNATIONAL
EXPERIENCE**

residential development. (Port Elizabeth, Eastern Cape)

CEN Integrated Environmental Management Unit: (2010) Environmental Impact Assessment for the proposed rezoning and subdivision of erven 1070, 409 and the remainder of Erf 385, Theescombe, Port Elizabeth, Eastern Cape for a residential development. (Port Elizabeth, Eastern Cape)

Coastal and Environmental Services. Environmental Impact Assessment for the proposed residential development at the existing golf course in Grahamstown, Eastern Cape Province of South Africa (2012).

Coastal and Environmental Services. Environmental Impact Assessment for the proposed golf course development at Belmont Valley, Grahamstown, Eastern Cape Province of South Africa (2012).

Coastal and Environmental Services. Basic Assessment for the proposed development of a 13 MW Photovoltaic energy generating facility in the Coega Industrial Development Zone (Zone 12), Port Elizabeth, Eastern Cape Province. Authorization received 29/02/12.

Coastal and Environmental Services. Environmental Impact Assessment for the Mooi-Mgeni Transfer Scheme – Phase 2, KwaZulu-Natal Province, South Africa (2012).

Coastal and Environmental Services. Environmental Impact Assessment for the proposed Peddie Wind Energy Project, Ngqushwa Local Municipality, Eastern Cape Province of South Africa (2012).

Coastal and Environmental Services. Environmental Impact Assessment for the proposed Kamiesberg Heavy Mineral mine in Namaqualand, Northern Cape Province (2014).

The following projects have been completed internationally and authorised by their respective governments to IFC Standards and included a large stakeholder engagement component, including but not limited to community meetings, focus group meetings, etc:

1. Environmental Impact Statement for a large scale copper mine in the North-Western Province of Zambia (2012).

Environmental Impact Statement for a large scale nickel mine in the North-Western Province of Zambia (2014).

SPECIALIST WORK

Environmental and Social Impact Assessment for a heavy minerals mine in the Toliara Province, Madagascar (2014).

Project Manager: Graphite Mine in Cabo-Delgado Province, Mozambique (2015).

The following land and natural resource use specialist studies have been completed internationally and authorised by their respective governments to IFC Standards and included a large stakeholder engagement component, including but not limited to community meetings, focus group meetings, etc:

1. Land and Natural Mineral Resources Assessment for a heavy minerals mine in the Toliara Province, Madagascar (2013).

Land and Natural Mineral Resources Assessment Iron ore mine in Tete Province, Mozambique (2015).

Land and Natural Mineral Resources Assessment graphite mine in Cabo Delgado Province, Mozambique (Ancuabe) (2016).

Land and Natural Resources Assessment graphite mine in Cabo Delgado Province, Mozambique (Nicanda Hills) (2016).

Land and Natural Resources Assessment heavy minerals mine in Nampula Province, Mozambique (2018).

High Level GHG Assessment for Kenmare Moma Heavy Minerals Mine, Mozambique (2016).

High Level GHG Assessment for Ranobe Heavy Minerals Mine, Madagascar (2017).

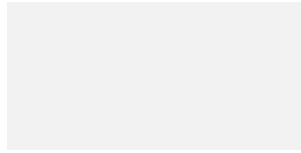
Rehabilitation Strategy for a heavy minerals mine in Mozambique (2018).

Closure Report for a graphite mine in Cabo Delgado Province, Mozambique (2018).

Estuarine Assessment for a heavy minerals mine in Nampula Province Mozambique (2018).

RESETTLEMENT WORK

1. Team Leader for large land survey undertaken as part of the resettlement process for a heavy minerals mine in Mozambique.
2. In-Kind Compensation Surveys for bulk infrastructure in Tanzania.



CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

A handwritten signature in black ink, appearing to be 'Chantel Bezuidenhout', written over a light grey rectangular background.

Chantel Bezuidenhout

Date: 1st October 2018