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## ENVIRONMENTAL IMPACT ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR:

**ENVIRONMENTAL IMPACT ASSESSMENT (SCOPING & EIR-PHASE) FOR THE PROPOSED SECTION 102 / PART 2 AMENDMENT APPLICATION COMBINED WITH WASTE LICENSE APPLICATION TO AMEND THE EXISTING PROSPECTING RIGHT WITH DMRE REF: NC30/5/1/1/2/11873PR TO INCLUDE THE PROSPECTING OF ALUMINIUM ORE (AL), ZINC ORE (ZN), SILICON ORE (SI) AND COPPER ORE (CU), REGISTRATION DIVISION: KURUMAN, NORTHERN CAPE PROVINCE.**

<b>NAME OF APPLICANT</b>	<b>Elite International Logistics (Pty) Ltd</b>
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<b>REFERENCE NUMBER:</b>	<b>NC-00130-PR/102 (11873PR)</b>

## **Table of Contents**

PROJECT INFORMATION.....	4
IMPORTANT NOTICE.....	5
ENVIRONMENTAL IMPACT ASSESSMENT PROCESS .....	6
OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS .....	6
SCOPE OF ASSESSMENT AND CONTENT OF ENVIRONMENTAL IMPACT ASSESSMENT REPORTS.....	7
A. CONTACT PERSON AND CORRESPONDENCE ADDRESS .....	7
B. DESCRIPTION OF THE PROPERTY .....	8
C. LOCALITY MAP.....	10
D. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY. 11	
E. POLICY AND LEGISLATIVE CONTEXT .....	23
F. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES. ....	33
G. A MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT .....	34
H. A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT.....	34
i) Details of the development footprint alternatives considered; .....	34
ii) Details of the Public Participation Process Followed.....	37
iii) Summary of Issues Raised by I&APs.....	41
iv) The environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; .....	48
v) The impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts—.....	71
vi) The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;.....	71
vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; 75	
viii) the possible mitigation measures that could be applied and level of residual risk; ...	76
ix) If no alternative development [location] footprints for the activity were investigated, the motivation for not considering such; and .....	76
x) A concluding statement indicating the location of the preferred alternative development [location] footprint within the approved site as contemplated in the accepted scoping report; .....	76
I. A FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS THE ACTIVITY AND ASSOCIATED STRUCTURES AND INFRASTRUCTURE WILL IMPOSE ON THE PREFERRED [LOCATION] DEVELOPMENT FOOTPRINT ON THE APPROVED SITE.....	76

J.	AN ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK, INCLUDING— .....	85
K.	SUMMARY OF THE FINDINGS AND RECOMMENDATIONS OF ANY SPECIALIST REPORT .....	102
L.	AN ENVIRONMENTAL IMPACT STATEMENT WHICH CONTAINS — .....	105
M.	PROPOSED IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR .....	107
N.	FINAL PROPOSED ALTERNATIVES. ....	107
O.	ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION.....	107
P.	DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE. ....	108
Q.	REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED.....	108
R.	PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED. ....	109
S.	AN UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP IN RELATION TO: .....	110
T.	FINANCIAL PROVISION .....	111
U.	DEVIATIONS FROM THE APPROVED SCOPING REPORT AND PLAN OF STUDY. ....	112
V.	ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY; AND .....	112
W.	COMPLIANCE WITH THE PROVISIONS OF SECTIONS 24(4)(A) AND (B) OF THE ACT.....	112
	ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT .....	113
A.	DETAILS OF—.....	113
B.	DESCRIPTION OF THE ASPECTS OF THE ACTIVITY.....	114
C.	COMPOSITE MAP.....	114
D.	A DESCRIPTION OF THE IMPACT MANAGEMENT [OBJECTIVES] OUTCOMES, INCLUDING MANAGEMENT STATEMENTS, IDENTIFYING THE IMPACTS AND RISKS THAT NEED TO BE AVOIDED, MANAGED AND MITIGATED AS IDENTIFIED THROUGH THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR ALL PHASES OF THE DEVELOPMENT INCLUDING— .....	114
E.	A DESCRIPTION AND IDENTIFICATION OF IMPACT MANAGEMENT OUTCOMES REQUIRED FOR THE ASPECTS CONTEMPLATED IN PARAGRAPH (D);] .....	115
F.	A DESCRIPTION OF PROPOSED IMPACT MANAGEMENT ACTIONS, IDENTIFYING THE MANNER IN WHICH THE IMPACT MANAGEMENT [OBJECTIVES AND] OUTCOMES CONTEMPLATED IN PARAGRAPH (D) [AND (E)] WILL BE ACHIEVED, AND MUST, WHERE APPLICABLE, INCLUDE ACTIONS TO — .....	117

G. MONITORING OF IMPACT MANAGEMENT ACTIONS ..... 189

H. MONITORING AND REPORTING FREQUENCY ..... 189

I. RESPONSIBLE PERSONS ..... 189

J. TIME PERIOD FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS 189

K. A PROGRAM FOR REPORTING ON COMPLIANCE, TAKING INTO  
ACCOUNT THE REQUIREMENTS AS BY THE REGULATIONS. .... 191



L. AN ENVIRONMENTAL AWARENESS PLAN DESCRIBING THE MANNER IN  
WHICH— ..... 191

M. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY  
191

PROJECT INFORMATION

<b>Project Name:</b>	Environmental Impact Assessment (Scoping & EIR-process) for the proposed prospecting right combined with waste license to prospect for Diamonds Kimberlite (DK), Gemstones except Diamonds (GS), Diamonds Alluvial (DA), Diamonds General (D), Diamonds (DIA), Gold Ore (Au), Aluminium ore (Al), Zinc ore (Zn), Silicon ore (Si) and Copper ore (Cu) on portion 1 (Kadgame number 3), portion 2 (Noordpool) and portion 4 (Bakenskop) of the farm Kadgame 558 located within the Kuruman Magisterial District, Northern Cape Province.
<b>Report Title:</b>	EIR & EMPr
<b>DMRE Ref:</b>	NC-00130-PR/102 (11873PR)
<b>Prepared By:</b>	Milnex CC Environmental Consultants
<b>Date:</b>	August 2023

**QUALITY CONTROL:**

	<b>Report Author:</b>	<b>Report Reviewer:</b>
<b>Name:</b>	Ms. Deshney Mapoko Reg. EAP EAPASA	Lizanne Esterhuizen Reg. EAP (EAPASA)
<b>Signature:</b>		

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**IMPORTANT NOTICE**

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

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

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

**It is therefore an instruction that** the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or 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.

## **ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

- (1) The environmental impact assessment process must be undertaken in line with the approved plan of study for environmental impact assessment.
- (2) The environmental impacts, mitigation and closure outcomes as well as the residual risks of the proposed activity must be set out in the environmental impact assessment report.

## **OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS**

2. The objective of the environmental impact assessment process is to, through a consultative process-
  - (a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
  - (b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
  - (c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
  - (d) determine the--
    - (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and
    - (ii) degree to which these impacts-
      - (aa) can be reversed;
      - (bb) may cause irreplaceable loss of resources, and
      - (cc) can be avoided, managed or mitigated;
  - (e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
  - (f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
  - (g) identify suitable measures to avoid, manage or mitigate identified impacts; and
  - (h) identify residual risks that need to be managed and monitored.

## SCOPE OF ASSESSMENT AND CONTENT OF ENVIRONMENTAL IMPACT ASSESSMENT REPORTS

### A. CONTACT PERSON AND CORRESPONDENCE ADDRESS

#### a) Details of:

- i) The EAP who prepared the report
- ii) Expertise of the EAP

NAME OF PRACTITIONER	QUALIFICATIONS	CONTACT DETAILS
Ms. Deshney Mapoko Reg. EAP (EAPASA)	National Diploma in Environmental Science Refer to <b>Appendix 1</b>	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:deshney@milnex-sa.co.za">deshney@milnex-sa.co.za</a>
Ms. Lizanne Esterhuizen Reg. EAP (EAPASA)	Honours Degree in Environmental Science Refer to <b>Appendix 1</b>	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:Lizanne@milnex-sa.co.za">Lizanne@milnex-sa.co.za</a>

**Summary of the EAP's past experience.** (Attach the EAP's curriculum vitae as **Appendix 2**).

Milnex CC was contracted by **Elite International Logistics (Pty) Ltd** as the independent environmental consultant to undertake the Scoping and EIA process for the section 102/part 2 amendment application to the existing Environmental Authorisation under the DMRE Ref: NC 30/5/1/1/3/2/11873 PR to include the prospecting of the Aluminium ore (Al), Zinc ore (Zn), Silicon ore (Si) and Copper ore (Cu). DMRE Ref: **NC-00130-PR/102** situated within the ZF Mgcawu Magisterial District, Northern Cape Province.

#### **Existing authorisation:**

Elite International Logistics (Pty) Ltd is the holder of a prospecting right under reference number NC30/5/1/1/2/11873PR to prospect for Diamonds Kimberlite, Gemstone except Diamonds, Diamonds Alluvial, Diamonds General, Diamonds and Gold Ore.

#### **Minerals to be included:**

The applicant is intending to include Aluminium ore (Al), Zinc Ore (Zn), Silicon ore (Si) and Copper ore (Cu) on the existing prospecting right.

Milnex CC does not have any interest in secondary developments that may arise out of the authorisation of the proposed project.

Milnex CC is a specialist environmental consultancy with extensive experience in the mining industry which provides a holistic environmental management service, including environmental assessment and planning to ensure compliance with relevant environmental legislation. Milnex CC benefits from the pooled resources, diverse skills and experience in the environmental and mining field held by its team that has been actively involved in undertaking environmental studies for a wide variety of mining related projects throughout South Africa. The Milnex CC team has considerable experience in environmental impact assessment and environmental management, especially in the mining industry.

Ms. Deshney Mapoko and Ms. Lizanne Esterhuizen have extensive consulting experience in the environmental field. Their key focus is on environmental assessment, advice and management and ensuring compliance to legislation and guidelines. They are currently involved in undertaking EIAs for several projects across the country (refer to **Appendix 2** for CVs).

## B. DESCRIPTION OF THE PROPERTY

<b>Reason for amendment</b>	<p><b>Elite International Logistics (Pty) Ltd</b> has received an environmental authorization to prospect for Diamonds Kimberlite, Gemstone except Diamonds, Diamonds Alluvial, Diamonds General, Diamonds, and Gold Ore on Portion 1 (Kadgame Number 3), Portion 2 (Noordpool) and Portion 4 (Bakenskop) of the farm Kadgame 558, Registration Division: Kuruman, Northern Cape province. <b>DMRE ref: NC30/5/1/1/2/11873PR.</b></p> <p>This application is to amend the existing environmental authorization to include the prospecting of Aluminium ore (Al), Zinc Ore (Zn), Silicon ore (Si) and Copper ore (Cu). <b>DMRE ref: NC-00130-PR/102</b></p>
<b>Farm name</b>	<ol style="list-style-type: none"> <li>Portion 1 (Kadgame Number 3) of the farm Kadgame no 558 Registration Division: District of Kuruman, Northern Cape Province Extent: ±846.8589 Title Deed: T147/1976</li> <li>Portion 2 (Noordpool) of the farm Kadgame no 558 Registration Division: District of Kuruman, Northern Cape Extent: 846.8589 Title Deed: T601/1986</li> <li>Portion 4 (Bakenskop) of the farm Kadgame 558 Registration Division: District of Kuruman, Northern Cape Extent: 846.8589 Title Deed: T3542/2003</li> </ol>
<b>Application area (Ha)</b>	± 2995 hectares
<b>Magisterial district:</b>	ZF Mgcawu District Municipality Tsantsabane Local Municipality
<b>Registration division</b>	Kuruman
<b>Distance and direction from nearest town</b>	The property is located within the Northern Cape Province, approximately 23 km South of Kathu and approximately 47km North of Postmansburg.
<b>Types of Minerals</b>	<p><b>Approved Minerals</b></p> <p>Diamonds Kimberlite (DK) Gemstones except Diamonds (GS) Diamonds Alluvial (DA) Diamonds General (D) Diamonds (DIA) Gold Ore (Au)</p> <p><b>Minerals to be Included</b></p>



	Aluminium ore (Al) Zinc ore (Zn) Silicon ore (Si) Copper ore (Cu)
<b>Locality map</b>	Attach a locality map at a <b>scale not smaller than 1:250000 and attach as Appendix 3</b>
<b>21 digit Surveyor General Code for each farm portion</b>	1) C04100000000055800001 2) C04100000000055800002 3) C04100000000055800004

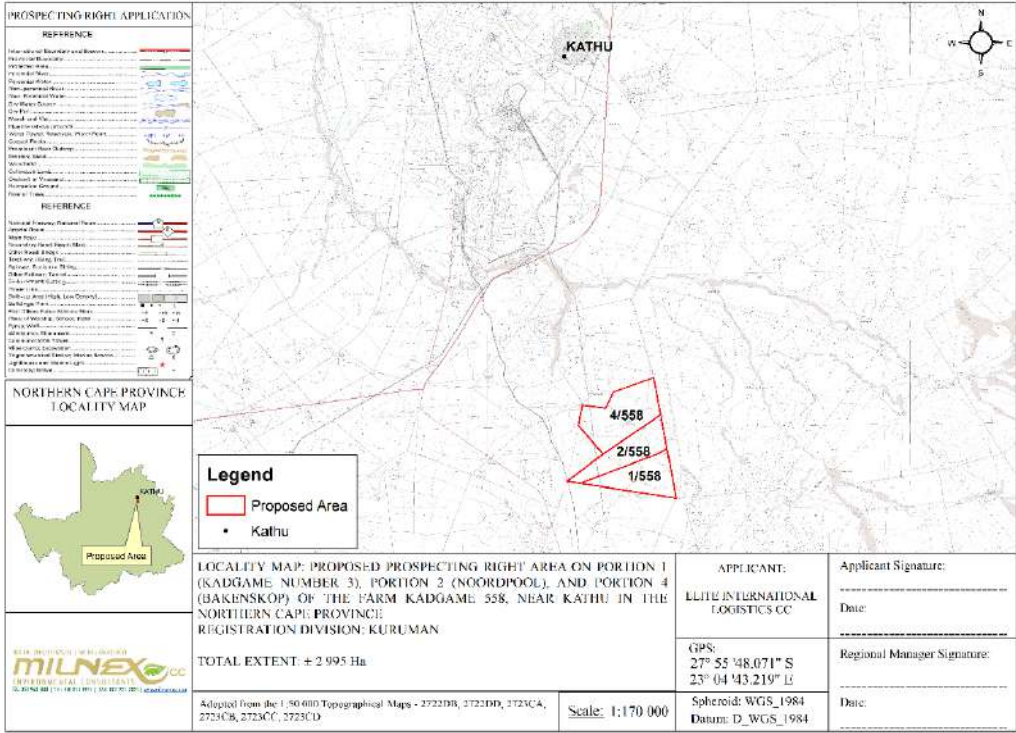
**iii. Farm co-ordinates**

<b>X</b>	<b>Y</b>	<b>X2</b>	<b>Y2</b>
23° 3' 22,961" E	27° 54' 28,051" S	23,056378	-27,907792
23° 3' 38,018" E	27° 54' 30,099" S	23,060561	-27,908361
23° 4' 12,543" E	27° 54' 34,791" S	23,070151	-27,909664
23° 4' 28,700" E	27° 54' 0,772" S	23,074639	-27,900214
23° 5' 54,706" E	27° 53' 29,615" S	23,098529	-27,89156
23° 5' 58,019" E	27° 53' 47,415" S	23,09945	-27,896504
23° 6' 9,402" E	27° 54' 48,585" S	23,102612	-27,913496
23° 6' 22,873" E	27° 56' 0,939" S	23,106354	-27,933594
23° 6' 42,454" E	27° 57' 46,070" S	23,111793	-27,962797
23° 4' 25,089" E	27° 57' 24,758" S	23,073636	-27,956877
23° 4' 3,545" E	27° 57' 21,410" S	23,067651	-27,955947
23° 3' 59,051" E	27° 57' 20,712" S	23,066403	-27,955753
23° 3' 18,673" E	27° 57' 14,437" S	23,055187	-27,95401
23° 2' 51,225" E	27° 57' 10,171" S	23,047562	-27,952825
23° 3' 52,005" E	27° 56' 23,569" S	23,064446	-27,93988
23° 3' 55,429" E	27° 56' 20,943" S	23,065397	-27,939151
23° 4' 6,926" E	27° 56' 12,127" S	23,068591	-27,936702
23° 3' 47,854" E	27° 55' 49,903" S	23,063293	-27,930529
23° 3' 14,551" E	27° 55' 11,084" S	23,054042	-27,919745

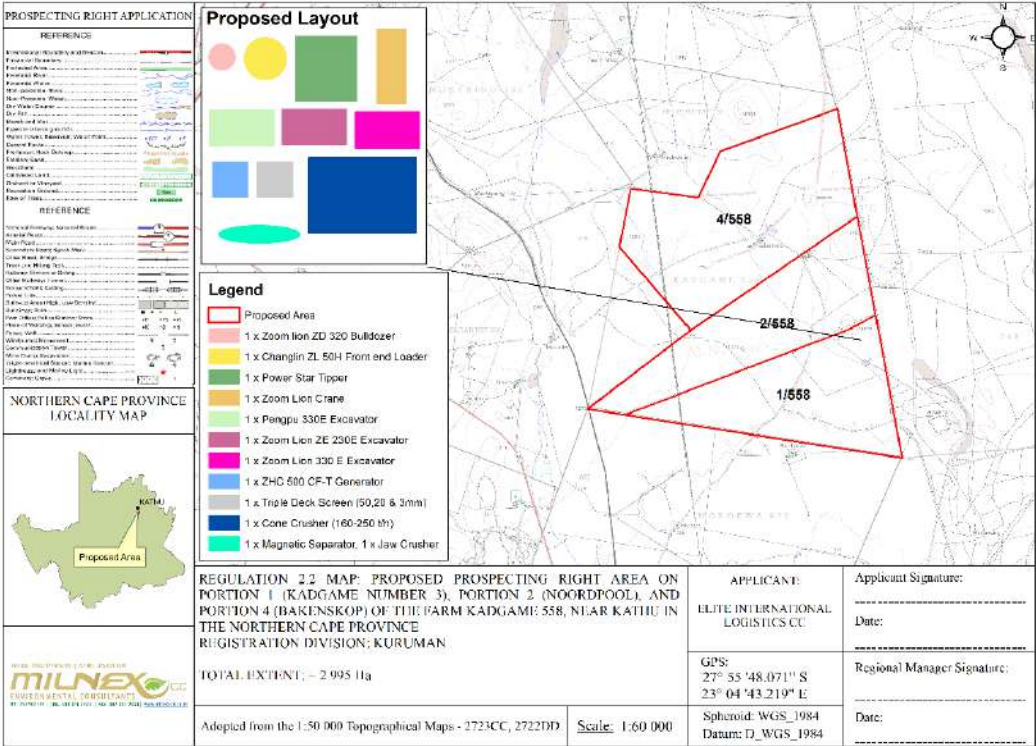
C. LOCALITY MAP

(show nearest town, scale not smaller than 1:250000 attached as **Appendix 3**).

A Locality map is attached in **Appendix 3** and on figure 4 below.



**Figure 4:** Locality Map  
Refer to Site Plan included within **Appendix 4**.



**Figure 5:** Site Plan map

## D. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY.

### i) LISTED AND SPECIFIED ACTIVITIES

Description of the overall activity. (Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)	Approved activities under NC30/5/1/1/2/11873PR
	<p>1) <b>Listing Notice 1 (GNR 983), Activity 20:</b> “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 associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).”</p> <p>2) <b>Listing Notice 2, (GNR 984), Activity 15:</b> “The clearance of an area of 20 hectares or more, of indigenous vegetation”.</p> <p>3) <b>Listing Notice 2, (GNR 984), Activity 19:</b> “The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).”</p> <p>4) <b>Listing Notice 2 (GNR 984), Activity 21:</b> “Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.”</p>
	<p><b>New activities applying for</b></p> <p>5) <b>Listing Notice 1, (GNR 327), Activity 19:</b> The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</p> <p>6) <b>Listing Notice 1, (GNR 327), Activity 24:</b> The development of a road— (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</p> <p>7) <b>Listing Notice 3 (GNR 324), Activity 4:</b> The development of a road wider than 4 metres with a reserve less than 13,5</p>



	<p>metres. <b>(g) Northern Cape (ii) Outside urban areas; (ee) Critical Biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority</b></p> <p>8) <b>Listing Notice 3 (GNR 324), Activity 10:</b> <i>The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. <b>(g) Northern Cape (iii) Outside urban areas: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</b></i></p> <p>9) <b>Listing Notice 3 (GNR 324), Activity 12:</b> <i>“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. <b>(g) Northern Cape (ii) Critical Biodiversity Areas as identified in biodiversity plans</b> “.</i></p> <p><b>NEM:WA 59 of 2008: Disposal of waste on land, Category B:</b></p> <p>10) <b>(7)</b> The disposal of any quantity of hazardous waste to land.</p> <p>11) <b>(8)</b> The disposal of general waste to land covering an area in excess of 200m<sup>2</sup> and with a total capacity exceeding 25 000 tons.</p> <p>Prospecting right with bulk samples for the prospecting of <b>Diamonds Kimberlite (DK), Gemstones except for Diamonds (GS), Diamonds Alluvial (DA), Diamonds General (D), Diamonds (DIA), Gold Ore (Au), Aluminium ore (Al), Zinc ore (Zn), Silicon ore (Si) and Copper ore (Cu)</b> including associated infrastructure, structure and earthworks.</p>
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<b>NAME OF ACTIVITY</b>  <b>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc</b> <b>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.)</b>	<b>Aerial extent of the Activity</b> <b>Ha or m²</b>	<b>LISTED ACTIVITY</b>  (Mark with an <b>X</b> where applicable or affected).	<b>APPLICABLE LISTING NOTICE</b>  <b>(GNR 324, GNR 325 or GNR 326)</b>	<b>WASTE MANAGEMENT AUTHORISATION</b>  (Indicate whether an authorisation is required in terms of the Waste Management Act) <b>(Mark with an X)</b>
<b>Prospecting:</b>  <b><u>BULK SAMPLING:</u></b> ± 2995 Ha <b>Drilling:</b> 20 x Percussion holes <b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each. <b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.  <b>Listing Notice 1 (GNR 983), Activity 20:</b> <i>“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 associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).”</i>	Random indigenous vegetation clearance of over a ± 2995 hectares area.  Backfilling will take place in order to rehabilitate	<b>X</b>	Listing Notice 1 (GNR 983), Activity 20	-
<b>Clearance of indigenous vegetation:</b>  <b><u>BULK SAMPLING:</u></b> ± 2995 Ha <b>Drilling:</b> 20 x Percussion holes <b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.	Random indigenous vegetation clearance of over a ± 2995 hectares area.		Listing Notice 2, (GNR 984), Activity 15	

<p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><b>Listing Notice 2, (GNR 984), Activity 15:</b> <i>"The clearance of an area of 20 hectares or more, of indigenous vegetation"</i></p>	Backfilling will take place in order to rehabilitate			
<p><b>Prospecting:</b></p> <p><b><u>BULK SAMPLING:</u></b> ± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><b>Listing Notice 2, (GNR 984), Activity 19:</b> <i>"The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)."</i></p>	<p>Random indigenous vegetation clearance of over a ± 2995 hectares area.</p> <p>Backfilling will take place in order to rehabilitate</p>	<b>X</b>	Listing Notice 2, (GNR 984), Activity 19:	-
<p><b>Prospecting:</b></p> <p><b><u>BULK SAMPLING:</u></b> ± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><b>Listing Notice 2 (GNR 984), Activity 21:</b> <i>"Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing,</i></p>	<p>Random indigenous vegetation clearance of over a ± 2995 hectares area.</p> <p>Backfilling will take place in order to rehabilitate</p>	<b>X</b>	Listing Notice 2 (GNR 984), Activity 21	

screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.”				
<p><b>Prospecting Right:</b></p> <p><b><u>BULK SAMPLING:</u></b> ± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><b><i>Listing Notice 1, (GNR 327), Activity 19: The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</i></b></p>	<p>Random indigenous vegetation clearance of over a ± 2995 hectares area.</p> <p>Backfilling will take place in order to rehabilitate</p>	<b>X</b>	Listing Notice 1, (GNR 327), Activity 19:	-

<p><b>Clearance of indigenous vegetation:</b></p> <p><b><u>BULK SAMPLING:</u></b>  ± 2995 Ha  <b>Drilling:</b> 20 x Percussion holes  <b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.  <b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><b>Listing Notice 1, (GNR 327), Activity 24:</b> The development of a road— (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</p>	<p>Random indigenous vegetation clearance of over a ± 2995 hectares area.</p> <p>Backfilling will take place in order to rehabilitate</p>	<p><b>X</b></p>	<p>Listing Notice 1, (GNR 327), Activity 24</p>	
<p><b>Prospecting:</b></p> <p><b><u>BULK SAMPLING:</u></b>  ± 2995 Ha  <b>Drilling:</b> 20 x Percussion holes  <b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.  <b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><b>Listing Notice 3 (GNR 324), Activity 4:</b> <i>The development of a road wider than 4 metres with a reserve less than 13,5 metres. (g) Northern Cape (ii) Outside urban areas; (ee) Critical Biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority</i></p>	<p>Random indigenous vegetation clearance of over a ± 2995 hectares area.</p> <p>Backfilling will take place in order to rehabilitate</p>	<p><b>X</b></p>	<p>Listing Notice 3 (GNR 324), Activity 4</p>	<p>-</p>



<p><b>Prospecting:</b></p> <p><b><u>BULK SAMPLING:</u></b>  ± 2995 Ha  <b>Drilling:</b> 20 x Percussion holes  <b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.  <b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><i><b>Listing Notice 3 (GNR 324), Activity 10:</b> The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. (g) Northern Cape (iii) Outside urban areas: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p>	<p>Random indigenous vegetation clearance of over a ± 2995 hectares area.</p> <p>Backfilling will take place in order to rehabilitate</p>	<p><b>X</b></p>	<p><b>Listing Notice 3 (GNR 324), Activity 10</b></p>	
<p><b>Clearance of indigenous vegetation:</b></p> <p><b><u>BULK SAMPLING:</u></b>  ± 2995 Ha  <b>Drilling:</b> 20 x Percussion holes  <b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.  <b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p> <p><i><b>Listing Notice 3 (GNR 324), Activity 12:</b> “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. (g) Northern Cape (ii) Critical Biodiversity Areas as identified in biodiversity plans “.</i></p>	<p>Random indigenous vegetation clearance of over a ± 2995 hectares area.</p> <p>Backfilling will take place in order to rehabilitate</p>	<p><b>X</b></p>	<p><b>Listing Notice 3 (GNR 324), Activity 12:</b></p>	<p>-</p>
<p><b>NEM:WA 59 of 2008: Disposal of waste on land, Category B:</b>  (7) The disposal of any quantity of hazardous waste to land.</p>		<p>-</p>	<p>NEM:WA 59 of 2008  Category B: (7)</p>	<p><b>X</b></p>

Milnex CC: EIA604AM -EIA & EMPr – Section 102/part 2 amendment application combined with Waste License application to amend the existing prospecting right with DMRE ref: NC30/5/1/1/2/11873PR to include the prospecting of Aluminium ore (al), Zinc ore (Zn), Silicon ore (Si) and Copper ore (Cu), registration division: Kuruman, Northern Cape Province. NC-00130-PR/102.

<p><b>NEM:WA 59 of 2008: Disposal of waste on land, Category B:</b>  (8) The disposal of general waste to land covering an area in excess of 200m2 and with a total capacity exceeding 25 000 tons.</p>		-	NEM:WA 59 of 2008 Category B: (8)	<b>X</b>
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**ii) DESCRIPTION OF THE ASSOCIATED STRUCTURES AND INFRASTRUCTURE RELATED TO THE DEVELOPMENT**

*(Describe Methodology or technology to be employed, and for a linear activity, a description of the route of the activity).*

Elite International Logistics (Pty) Ltd is the holder of a prospecting right under reference number NC30/5/1/1/2/11873PR to prospect for Diamonds Kimberlite, Gemstone except Diamonds, Diamonds Alluvial, Diamonds General, Diamonds and Gold Ore.

This application is to amend the existing environmental authorization to include the prospecting of Aluminium ore (Al), Zinc Ore (Zn), Silicon ore (Si) and Copper ore (Cu). DMRE ref: NC-00130-PR/102.

**Both invasive and non-invasive methods will be used during the prospecting operation.**

**NON-INVASIVE METHODS:**

- Prospective mineralized areas will be identified using a magnetic ground survey;
- Soil sampling and microscopic identification of kimberlite bearing minerals will occur.

**INVASIVE METHODS:**

- Drilling and trenching will occur in the identified mineralized areas and bulk samples will be collected.
- Heavy mineral Separation will be done through a jig plant.
- The information will then be compiled and interpreted.

**GEOCHEMICAL SURVEY TO BE CONDUCTED**

- A minimum of 30 lithological samples will be taken from within the prospected Areas.
- Soil samples will be taken at a minimum depth of 3m below the ground surface – 3m x 2m x 3m.
- The samples will be analyzed at an independent laboratory.

**GEOPHYSICAL SURVEY TO BE CONDUCTED**

- A ground magnetic survey will be undertaken over anomalous areas.
- This will be conducted using a portable magnetometer, which measures oscillations in magnetic tolerances and will be of use in ascertaining the structural geology of the prospecting area.

**ANY EXCAVATIONS, TRENCHING, PITTING AND DRILLING**

- A minimum of 20 percussion holes of at least 20mm in diameter, will be drilled to ascertain the whereabouts and quality of the mineral deposits.
- The drilling will result in accurate surveys of the borehole positions and will be of a short-term nature.
- A professional geologist will log the boreholes in accordance with among other things, their mineralization and lithology.
- Each borehole will be plugged and capped, and the drilling area will be fully rehabilitated, with the borehole core being removed from the prospecting area.
- A minimum of 20 trenches of 20m by 3m wide by 10m deep will be dug.
- The position of the trenches will be decided in accordance with the results of the drilling programme.

- This trenching will entail mechanical digging, and the trench excavation will be benched to ensure stability and safety.

#### ANY BULK SAMPLING AND TESTING TO BE CARRIED OUT

- The position of the bulk sampling pits will be determined in accordance with the geological mapping results.
- Bulk samples will be collected to the volume of 10 cubic metres per excavation site.
- The bulk samples will be processed and separated at a jig plant and will be used to determine the values and grade of the minerals.

#### ANY OTHER PROSPECTING METHODS TO BE APPLIED

- The results will then be consolidated and interpreted in order to ascertain the potential of the mineral deposits and identify areas for further investigation.
- A feasibility study may also be conducted at the conclusion of the prospecting operation.

### **WATER SUPPLY**

#### Provision of potable and palatable water

The applicant will ensure that sufficient potable and palatable water, which complies with the requirements set out in Schedule 1 of the National Water Act 36 of 1998 (NWA) will be readily available to all employees and clearly identified as drinkable (**National Water Act 36 of 1998**).

The proposed prospecting activities trigger water uses under section 21 of the National Water Act 1998. Therefore, a water use License has been issued by the Department of Water and Sanitation for the proposed application with license no: 08/D41J/IBGC/6508. The approved activities under section 21 included the S21(a), (b), (c), (g) and (i). This license will be utilised for the life of the applied prospecting activities.

### **DUST SUPPRESSION**

Monitoring compliance with the requirements of the National Dust Control Regulations for an activity, in terms of nuisance or disturbance.

The National Framework for Air Quality Management in the Republic of South Africa (the National Framework), as published under Government Notice No. 1144 of 26 October 2018, underpins NEM:AQA by providing national norms and standards for air quality management to ensure compliance with legislation. The National Framework serves as the country's AQMP.

Section 32 of the NEM:AQA makes provision for the Minister or the MEC to prescribe measures for the control of dust in specific places or areas, or by specified machinery or in specific instances. While dust generally does not pose a health risk, it may be regarded as a nuisance. It is the responsibility of the owner of the dust generating activity to take reasonable measures to limit the nuisance factor.

With respect to this, the Minister has published in the gazette the regulations for the control of dust in 2013 (Notice 827, Government Gazette No. 36974). These regulations provide requirements for measures for the control of dust, which includes the requirements for monitoring, dust management plan development and implementation and reporting.

According to dust levels set out by the National Dust Control Regulations 2013 (GNR. 827). The limits have the following threshold Section 3. Dust fall standard.

**Table 1. Acceptable dust fall rates**

<b>Restriction Areas</b>	<b>Dustfall rate (D) (mg/m<sup>2</sup>/day, average) 30-day</b>	<b>Permitted frequency of exceeding dust fall rate</b>
<i>Residential Area</i>	<i>D &lt; 600</i>	<i>Two within a year, not sequential months</i>
<i>Non-residential Area</i>	<i>600 &lt; D &lt; 1200</i>	<i>Two within a year, not sequential months</i>

### **ABLUTION**

Sufficient ablution facilities will have to be provided, in the form of portable/VIP toilets. Due to the location of the project area, as it located approximately 20km away from any nearby town and it is surrounded by other mine areas. It is foreseen that the portable toilet services might not be reached regularly, therefore it is advised that French drains system be investigated for the proposed activity.

### **LIST OF EQUIPMENT'S & INFRASTRUCTURE**

<b>Yellow Fleet</b>			
	<b>No.</b>		
<b>Zoomlion Excavator ZE 230 E</b>	<b>1</b>	<b>Bucket</b>	
<b>Zoomlion Excavator ZE 330 E</b>	<b>2</b>	<b>Bucket</b>	
<b>Pengpu Excavator SW 330 E</b>	<b>3</b>	<b>Bucket</b>	
<b>Pengpu Excavator SW 330 E</b>	<b>4</b>	<b>Hydraulic Hammer</b>	<b>GB320F Hydraulic Hammer</b>
<b>Pengpu Excavator SW 330 E</b>	<b>5</b>	<b>Bucket</b>	
<b>Changlin front end loader ZL 50 H</b>	<b>1</b>		
<b>Changlin front end loader ZL 50 H</b>	<b>2</b>		
<b>Changlin front end loader ZL 50 H</b>	<b>3</b>		
<b>Changlin front end loader ZL 50 H</b>	<b>4</b>		
<b>Changlin front end loader 957 H</b>	<b>5</b>		
<b>Changlin TLB</b>	<b>1</b>		
<b>Zoomlion Dozer 320.3</b>	<b>1</b>		
<b>Zoomlion Crane 30T</b>	<b>1</b>		
<b>Powerstar Tipper 40.35</b>	<b>1</b>		
<b>Powerstar Tipper 40.35</b>	<b>2</b>		

<b>Yellow Plant process</b>			
Jaw Crusher	1		
Screen Unit	1		
Screen Unit	2		
Cone Crusher	1		
Cone Crusher	2		
Conveyor Belts			25 Units
Magnetic Seperator	1		
Magnetic Seperator	2		
Control room -Fully equiped	1		
Bin	1		
Bin	2		
Bin	3		To magnetic separator
Bin	4		To conveyor 22

## **ACCESS ROADS**

Access will be obtained from existing gravel roads. It should be noted that in South Africa the responsibility of maintaining formal gravel roads has generally fallen on public authorities. Maintenance of these formal roads has been carried out either directly by these Provincial Departments or contracted out to private enterprise. The applicant's responsibility will be to maintain his own farm road on his property.

Any internal gravel farm roads which are jointly used with other users will need to be maintained by all parties involved.

The South African National Roads Agency Limited (SANRAL) is *responsible for the planning, design, construction, operation, management, control, maintenance and rehabilitation of the South African national road network, including the financing of these functions*. Therefore, as per the Act, no other parties are allowed to carry out the above mentioned as this is the main functions of Agency (**South African National Roads Agency Limited and National Roads Act 7 of 1998**).

## **STORAGE OF DANGEROUS GOODS**

During the prospecting activities, limited quantities of diesel and fuel, oil and lubricants if any will be stored on site. These goods should be placed in a bunded area one and a half times the volume of the total amount of goods to be stored.

## **STOCKPILE AREAS AND THE WASTE ROCK DUMP**

The following activities will take place at closure:

- Any residue stockpiles need to be removed and placed in the base of the final void (excluding the final waste rock dump that will remain);

- It is recommended that the Waste Rock dump be shaped to an 18° slope; and
- Topsoil will be spread over all disturbed areas and re-vegetated.

## **SECURITY AND ACCESS CONTROL**

A perimeter fence will be constructed around the prospecting area. Access control points with mobile office units and posted guards and gates will be placed at the main mine entrance as well as at the entrances to the process plant and prospecting service area.

## **PROSPECTING ACTIVITIES AND PHASES**

Please find the Prospecting Work Programme attached as **Appendix 8**.

### **E. POLICY AND LEGISLATIVE CONTEXT**

(a description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;)

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act No. 107 of 1998 as amended.	Department of Environmental Affairs	27 November 1998
Constitution of South Africa Act 108 of 1996	National	18 December 1996
The National Heritage Resources Act (Act No. 25 of 1999)	SAHRA	1999
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	Department of Mineral Resources & Energy (DMRE)	2002
Mineral and Petroleum Resources Development Regulations, 2014.	Department of Mineral Resources & Energy (DMRE)	
National Infrastructure Plan	National	
National Environmental Management: Biodiversity Act No. 10 of 2004	Department of Environmental Affairs	7 June 2004
National Environmental Management Waste Act, 2008 (Act No. 59 of 2008)	National & Provincial	1 July 2009
National Environmental Management: Waste Act, 2008 (Act No. 59 Of 2008). Regulations regarding the Planning & Management of Residue Stockpiles & Residue Deposits from a Prospecting, Mining, Exploration or Production Operation		
EIA regulations under NEMA	Department of Environmental Affairs	14 December 2014
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	Department of Agriculture Forestry and Fisheries	1 June 1984

National Environmental Management Air Quality Act, 2004 (Act No. 39 of 2004).	National and Provincial	11 September 2004
National Water Act, 1998 (Act No. 36 of 1998).	National	20 August 1998
National Forest Act (Act 84 of 1998) (NFA)	National	30 October 1998
National Veld & Forest Fires Act (Act 101 of 1998)	National	27 November 1998
National Environmental Management: Protected Areas Act 57 of 2003		
Hazardous Substances Act (No. 15 of 1979)		
Subdivision of Agricultural Land Act (No. 70 of 1970)		
Occupational Health and Safety Act (No. 85 of 1993)		
Mine Health and Safety Act (No. 29 of 1996)		
Government Notice Regulation 704 of 1999		
ZF Mgcawu District Municipality Integrated Development Plan (IDP)	Municipal	
Tsantsabane Local Municipality Integrated Development Plan (IDP)	Municipal	



## POLICY AND LEGISLATIVE CONTEXT

Title of legislation, policy or guideline:	Reference where applied	How does this development comply with and respond to the legislation and policy context.
Constitution of South Africa Act 108 of 1996	Section 24	<p>The Constitution is the supreme law of the Republic, and all law and conduct must be consistent with the Constitution. The Chapter on the Bill of Rights contains a number of provisions, which are relevant to securing the protection of the environment. Section 24 of the Constitution of the Republic of South Africa (Act 108 of 1996) states the following:</p> <p><i>“Everyone has the right –</i>  <i>(a) to an environment that is not harmful to their health or well-being; and</i>  <i>(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –</i>  <i>i) prevent pollution and ecological degradation;</i>  <i>ii) promote conservation; and</i>  <i>iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”</i></p> <p>The Constitution, therefore, compels government to give effect to the people’s environmental right and places government under a legal duty to act as a responsible custodian of the countries environment. It compels government to pass legislation and use other measures to protect the environment, to prevent pollution and ecological degradation, promote conservation and secure sustainable development.</p>
National Environmental Management Act No. 107 of 1998 as amended.	S24(1) of NEMA S28(1) of NEMA	<p>NEMA provides for co-operative governance by establishing principles and procedures for decision-makers on matters affecting the environment. An important function of the Act is to serve as an enabling Act for the promulgation of legislation to effectively address integrated environmental management. Some of the principles in the Act are accountability; affordability; cradle to grave management; equity; integration; open information; polluter pays; subsidiary; waste avoidance and minimisation; co-operative governance; sustainable development; and environmental protection and justice.</p> <p>The mandate for EIA lays with the National Environmental Management Act (107 of 1998) and the EIA Regulations No. 326, 327, 325, and 324 promulgated in terms of Section 24 of NEMA. The EIA Regulations determine that an Environmental Authorisation is required for certain listed activities, which might have a detrimental effect on the environment.</p>

EIA regulations as amended under NEMA	Listing notices 1 Listing notice 2 Listing Notice 3	The National Environmental Management Act 107 of 1998 (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment. These activities are detailed in Listing Notice 1 (as amended by GNR 327 of 7 April 2017), Listing Notice 2 (as amended by GNR325 of 7 April 2017) and Listing Notice 3 (as amended by GNR324 of 7 April 2017). Undertaking activities specified in the Listing Notices are only allowed once Environmental Authorisation has been obtained from the competent authority. Such Environmental Authorisation will only be considered once there has been compliance with the EIA Regulations, 2014. The Environmental Authorisation which may be granted subject to conditions.
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	Section 10, 16, 22, 27 and 48	The Minerals and Petroleum Resources Development Act identifies the state as the official custodian of South Africa's Mineral and Petroleum Resources. Therefore, all activities relating to the reconnaissance, prospecting rights, mining rights, mining permits and retention permits are regulated by the State. One of the objectives of the Act is to 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.
Mineral and Petroleum Resources Development Regulations, 2014.	Regulations 3, 5, 10 and 14	MPRDA Regulations prescribe how an application for a permit or right must be lodged.
The National Heritage Resources Act (Act No. 25 of 1999)	Section 35 Section 38	The National Heritage Resources Act (Act No 25 of 1999, Section 35) protects South Africa's unique and non-renewable archaeological and palaeontological heritage sites. These sites may not be disturbed without a permit from the relevant heritage resources authority. Section 38 of the NHRA provides guidelines for Cultural Resources Management and proposed developments:
National Environmental Management Waste Act, 2008 (Act No. 59 of 2008)	Category A Category B Category C	<p>Section 24S of NEMA deals with the management of residue stockpiles and residue deposits and provides that Residue stockpiles and residue deposits must be deposited and managed in accordance with the provisions of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), on any site demarcated for that purpose in the environmental management plan or environmental management programme in question.</p> <p>The management of residue stockpiles and residue deposits must be done in accordance with any conditions set out and any identified measures in the environmental authorisation issued in terms of NEMA, an environmental management programme and a waste management licence issued in terms of NEMA (Regulation 3(2)).</p>

		<p>The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) regulates waste management in all aspects and created a list of waste management activities that have, or are likely to have, a detrimental effect on the environment, which requires an impact assessment and licensing process. Activities listed in Category A require a Basic Assessment process, activities listed in Category B require a Scoping and EIA process and activities under Category C must comply with the relevant requirements or standards, in order for competent authorities to consider an application in terms of NEM:WA.</p>
<p>National Environmental Management: Biodiversity Act No. 10 of 2004</p>	<p>Chapter 4 Chapter 5</p>	<p>The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is part of a suite of legislation falling under NEMA. The Act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant protection; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith (SANBI).</p> <p>Chapter 4 of NEMBA deals with threatened and protected ecosystems and species to ensure the maintenance of their ecological integrity, their survival in the wild, the utilisation of biodiversity is managed in an ecologically sustainable way and to regulate international trade in specimens of endangered species. Chapter 5 of NEMA deals with species and organisms posing potential threats to biodiversity. The purpose of this chapter is to prevent the introduction and spread of alien species and invasive species, also to manage, control and eradicate alien species and invasive species</p>
<p>National Environmental Management Air Quality Act, 2004 (Act No. 39 of 2004).</p>	<p>Section 21</p>	<p>The object of this Act is to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air in the Republic; the prevention of air pollution and ecological degradation; and securing ecologically sustainable development while promoting justifiable economic and social development.</p> <p>Regulations No. R248 (of 31 March 2010) promulgated in terms of Section 21(1) (a) of the National Environmental Management Act: Air Quality Act (39 of 2004) determine that an Atmospheric Emission License (AEL) is required for certain listed activities, which result in atmospheric emissions which have or may have a detrimental effect on the environment. The Regulation also sets out the minimum emission standards for the listed activities. It is not envisaged that an Atmospheric Emission License will be required for the proposed development.</p>

National Water Act, 1998 (Act No. 36 of 1998).	Section 21	<p>Sustainability and equity are identified as central guiding principles in the protection, use, development, conservation, management and control of water resources. The intention of the Act is to promote the equitable access to water and the sustainable use of water, redress past racial and gender discrimination, and facilitate economic and social development. The Act provides the rights of access to basic water supply and sanitation, and environmentally, it provides for the protection of aquatic and associated ecosystems, the reduction and prevention of pollution and degradation of water resources.</p> <p>As this Act is founded on the principle that National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, a person can only be entitled to use water if the use is permissible under the Act. Chapter 4 of the Act lays the basis for regulating water use.</p>
National Forest Act (Act 84 of 1998) (NFA)	Regulation 7	<p>The protection, sustainable management and use of forests and trees within South Africa are provided for under the National Forests Act (Act 84 of 1998).</p> <p>Regulation 7 from the Act states the following:</p> <p><b>Prohibition on destruction of trees in natural forests.</b></p> <p>(1) No person may -</p> <p>(a) cut, disturb, damage or destroy any indigenous tree in a natural forest; or</p> <p>(b) possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any tree, or any forest product derived from a tree contemplated in paragraph (a), except in terms of-</p> <p>(i) a licence issued under subsection (4) or section 23; or</p> <p>(ii) an exemption from the provisions of this subsection published by the Minister in the Gazette on the advice of the Council.</p>
National Veld & Forest Fires Act (Act 101 of 1998)	Regulation 13 Chapter 5	<p>The purpose of the Act is to prevent and combat veld, forest and mountain fires throughout the Republic and provides for a variety of institutions, methods and practices for achieving the purpose. Regulations 13 provides the requirement for firebreaks. Chapter 5 places a duty on all owners to acquire equipment and have available personnel to fight fires.</p>

<p>Conservation of Agricultural Resources Act (Act No. 85 of 1983)</p>		<p>The purpose of the Act is to provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.</p> <p>The objects of this Act are to provide for the conservation of the natural agricultural resources of the Republic by the maintenance of the production potential of land, by the combating and prevention of erosion and weakening or destruction of the water sources, and by the protection of the vegetation and the combating of weeds and invader plants.</p>
<p>National Infrastructure Plan</p>		<p>The National Government adopted a National Infrastructure Plan in 2012. With the plan they aim to transform the South African economic landscape while simultaneously creating significant numbers of new jobs and strengthening the delivery of basic services.</p> <p>Government will over the three years from 2013/14 invest R827 billion in building and upgrading existing infrastructure.</p> <p>These investments will improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. On the other hand, investments in the construction of ports, roads, railway systems, electricity plants, hospitals, schools and dams will contribute to faster economic growth.</p> <p>This mining activity will indirectly contribute to the growing of the South African economy by supplying SANRAL with material to build and upgrade road infrastructure.</p>
<p>District Municipality Integrated Development Plan (IDP)</p>		<p>The IDP and SDFs of the relevant municipalities was examined and relevant information was included in the EIA report.</p>
<p>Local Municipality Integrated Development Plan (IDP)</p>		<p>The IDP and SDFs of the relevant municipalities was examined and relevant information was included in the EIA report.</p>
<p>National Environmental Management: Protected Areas Act 57 of 2003</p>		<p>This Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It also seeks to provide for the sustainable utilization of protected areas and to promote participation of local communities in the management of protected areas.</p>

National Environmental Management: Waste Act, 2008 (Act No. 59 Of 2008) Regulations regarding the Planning & Management of Residue Stockpiles & Residue Deposits from a Prospecting, Mining, Exploration or Production Operation		The purpose of these Regulations is to regulate the planning and management of residue stockpiles and residue deposits from a prospecting, mining, exploration or production operation.
Hazardous Substances Act (No. 15 of 1979)		<p>The object of the Act is inter alia to 'provide for the control of substances which may cause injury or ill health to, or death of, human beings by reason of their toxic, corrosive, irritant, strongly sensitising or flammable nature or the generation of pressure thereby in certain circumstances; for the control of electronic products; for the division of such substances or products into groups in relation to the degree of danger; for the prohibition and control of such substances.'</p> <p>In terms of the Act, substances are divided into schedules, based on their relative degree of toxicity, and the Act provides for the control of importation, manufacture, sale, use, operation, application, modification, disposal and dumping of substances in each schedule.</p>
Subdivision of Agricultural Land Act (No. 70 of 1970)		This Act regulates the subdivision of agricultural land and its use for purposes other than agriculture. The Directorate of Resource Conservation is responsible for the enforcement thereof. Investigations are done by the Provincial Department in support of the execution of the Act. The Act also deals with aspects associated with rezoning land.
Occupational Health and Safety Act (No. 85 of 1993)		<p>The Occupational Health and Safety Act (No. 85 of 1993) (OHSA) provides a legislative framework for the provision of reasonably healthy and safe conditions in the workplace. It also places extensive legal duties on employees and users of machinery and makes major inroads on employers' and employees' common law rights.</p> <p>The OHSA is applicable and states that any person involved with construction, upgrades or developments for use at work or on any premises shall ensure as far as reasonably practicable that nothing about the manner in which it is installed, erected or constructed makes it unsafe or creates a risk to health when properly used</p>

<p>Mine Health and Safety Act (No. 29 of 1996)</p>	<p>The Mine Health and Safety Act (No. 29 of 1996) (MHSA) aims to protect and promote the health and safety of employees and persons that may be affected by the activities at a mine and outlines both the rights and responsibilities of an employer, as well as the obligations of employees working thereat.</p> <p>The following principles are considered applicable to the Proposed Project and are detailed below:</p> <ul style="list-style-type: none"> <li>• The primary responsibility for ensuring a health and safe working environment in the mining site is placed on the mine owner. The Act sets out in detail the steps that employers must take to identify, assess records and control health and safety hazards in the mine;</li> <li>• The right of workers to participate in health and safety decisions, the right to receive health and safety information, the right to training and the right to withdraw from the workplace in face of danger;</li> <li>• The Act requires the establishment of institutions to promote a culture of health and safety and develop policy, legislation and regulations; and</li> <li>• The responsibility for enforcing MHSA lies with the Mine Health and Safety Inspectorate. The Inspectorate's powers are recast and include the power to impose administrative fines upon employers who contravene the MHSA.</li> </ul> <p>The Act also contains innovative approaches to the investigation of accidents, diseases and other occurrences that threaten health and safety.</p>
<p>Government Notice Regulation 704 of 1999</p>	<p>GNR.704 of 1999 under the NWA provides regulations on the use of water for mining and related activities aimed at the protection of water resources (requirements for clean and dirty water separation). GNR.704 requires inter alia the following:</p> <ul style="list-style-type: none"> <li>• Separation of clean (unpolluted) water from dirty water;</li> <li>• Collection and confinement of the water arising within any dirty area into a dirty water system;</li> <li>• Design, construction, maintenance and operation of the clean water and dirty water management systems so that it is not likely for either system to spill into the other more than once in 50 years;</li> <li>• Design, construction, maintenance and operation of any dam that forms part of a dirty water system to have a minimum freeboard of 0.8m above full supply level, unless otherwise specified in terms of Chapter 12 of the Act; and</li> <li>• Design, construction, and maintenance of all water systems in such a manner as to guarantee the serviceability of such conveyances for flows up to and including those arising as a result of the maximum flood with an average period of recurrence of once in 50 years.</li> </ul> <p><u>GNR.704 also stipulates that no person in control of a mine or activity may:</u></p>



		<p>Locate or place any residue deposit, dam, reservoir, together with any associated structure or any other facility within the 1:100 year flood line or within a horizontal distance of 100 m from any watercourse or estuary, borehole or well, excluding boreholes or wells drilled specifically to monitor the pollution of groundwater, or on water-logged ground, or on ground likely to become water-logged, undermined, unstable or cracked;</p> <p>Place or dispose of any residue or substance which causes or is likely to cause pollution of a water resource, in the workings of any underground or opencast mine excavation, prospecting diggings, pit or any other excavation; or</p> <p>Use any area or locate any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution of a water resource within the 1:50 year flood line of any watercourse or estuary.</p>
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## **F. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.**

*(A motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred [location] development footprint within the approved site as contemplated in the accepted scoping report;).*

Economic activity in modern-day South Africa has been centred on mining activities, their ancillary services and supplies. The country's stock exchange in Johannesburg was established in 1887, a decade after the first diamonds were discovered on the banks of the Orange River, and almost simultaneously with the gold rush on the world-famous Witwatersrand.

In many ways, South Africa's political, social and economic landscape has been dominated by mining, given that, for so many years, the sector has been the mainstay of the South African economy. Although gold, diamonds, platinum and coal are the most well-known among the minerals and metals mined, South Africa also hosts chrome, vanadium, titanium and a number of other lesser minerals.

In 2018 the mining sector contributed R351 billion to the South African gross domestic product (GDP). A total of 456,438 people were employed in the mining sector in 2018. Each person employed in the mining sector has up to nine indirect dependents. The mining sector has, for many years, attracted valuable foreign direct investment to South Africa. (Mineral Council, 2021)

Diamonds, arguably the ultimate luxury mineral, comprise an intricate lattice of carbon atoms, a crystalline structure that makes them harder than any other form in nature. This characteristic makes diamonds not only popular in jewellery, but also desirable in high-tech cutting, grinding and polishing tools (Chamber of Mines, South Africa, 12:2016).

According to the Chamber of Mines the country's diamond sector is far from reaching the end of its life even though diamond mining has been taking place in South Africa for almost a century and a half. The primary sources of all of South Africa's diamonds are kimberlites in ancient, vertically dipping volcanic pipes most of which were located in the vicinity of the city of Kimberley and which were initially amenable to open-cast.

Economic growth - South Africa's total reserves remain some of the world's most valuable, with an estimated worth of R20.3-trillion. Overall, the country is estimated to have the world's fifth-largest mining sector in terms of GDP value.

With South Africa's economy built on gold and diamond mining, the sector is an important foreign exchange earner, with gold accounting for more than one-third of exports. In 2009, the country's diamond industry was the fourth largest in the world.

Mining is a cornerstone of the economy, making a significant contribution to economic activity, job creation and foreign exchange earnings. Mining and its related industries are critical to South Africa's socio-economic development.

## **PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.**

The environmental authorisation is required for a minimum of 5 years.

## **G. A MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT**

*(-within the approved site as contemplated in the accepted scoping report;)*

*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.*

### **Location of the site**

The prospecting rights activities are proposed to be undertaken over the portion 1 (Kadgame number 3), portion 2 (Noordpool) and portion 4 (Bakenskop) of the farm Kadgame 558 located within the Kuruman Magisterial District, Northern Cape Province.

According to the PWP, the proposed farm portions are located approximately 16km towards the south-east of the Sishen Iron Ore Mine and easily accessible via the Kathu-Postmasburg bitumen road. The geologist appointed by the applicant has indicated that diamonds, gold, gemstones (except diamonds), aluminium ore, zinc ore, silicone ore and copper ore may be found on this property. Access will be obtained from existing tar and gravel roads.

## **H. A FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT**

*(-within the approved site as contemplated in the accepted scoping report, including;)*

### **i) Details of the development footprint alternatives considered;**

- **Consideration of alternatives**

The DEAT 2006 guidelines on ‘assessment of alternatives and impacts’ proposes the consideration of four types of alternatives namely, the no-go, site, activity, and technology alternatives. It is, however, important to note that the regulation and guidelines specifically state that only ‘feasible’ and ‘reasonable’ alternatives should be explored. It also recognizes that the consideration of alternatives is an iterative process of feedback between the developer, the EAP and Interested and affected parties, which in some instances culminates in a single preferred project proposal. The following sections explore each type of alternative in relation to the proposed activity.

- **Location alternatives**

The applicant (Elite International Logistics (Pty) Ltd) has received an environmental authorization to prospect for Diamonds Kimberlite, Gemstone except Diamonds, Diamonds Alluvial, Diamonds General, Diamonds and Gold Ore on Portion 1 (Kadgame Number 3), Portion 2 (Noordpool) and Portion 4 (Bakenskop) of the farm Kadgame 558, Registration Division: Kuruman, Northern Cape province. DMRE ref: NC30/5/1/1/2/11873PR. This application is therefore to amend the existing authorisation to include the prospecting of Aluminium ore (Al), Zinc Ore (Zn), Silicon ore (Si) and Copper ore (Cu) (DMRE ref: NC-00130-PR/102) over the same farm areas.

There are also existing mining activities within the project area, by Kadgame Mining (Pty) Ltd for Iron ore and Manganese ore. Based on the geological setting of the area as well as the surrounding mining activities in the area, the possibility to encounter further mineral

reserves were identified. No other properties have been secured by the applicant and the site is therefore regarded as the preferred site, and alternatives are not considered.

- **Activity alternatives**

In terms of the technologies proposed for the applied activities, these have been chosen based on long term success in terms of their prospecting history. The prospecting activities proposed in the Prospecting Work Programme are dependent on the success of the preceding phase, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

The alternatives that exist for the proposed prospecting are mainly, prospecting with bulk sampling or prospecting without bulk sampling, it is important to note however, the negative impacts are significant when prospecting with bulk sampling. In this case, prospecting with bulk sampling will be the type of activity that will be undertaken.

- **Design and layout alternatives**

The layout follows the limitations of the site and aspects such as, roads, site offices and workshop area.

The location of the activities will be determined based on the location of the prospecting activities, which will only be determined during phase 1 and 2 of the Prospecting Work Programme (see **Appendix 8**).

According to the land cover map, the proposed area is largely natural land. There are mining activities that are taking place adjacent to the proposed area as well as within the project area.

All infrastructure will be temporary and/or mobile.

- **Operational alternatives**

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage services are required.

Pits will be dug by an excavator and boreholes drilled for the purpose of soil sampling. If gravel / mineral ore is found, the applicant will determine the composition and quality of the gravel / mineral ore.

The applicant will proceed with this way of prospecting by means of the open cast/trenching method, simultaneously or after pitting and drilling depending on the information obtained from the earlier work done. The trenches will be dug to remove and process the gravel / mineral ore. Gravel / mineral ore will be removed by excavators and will be loaded directly into dump trucks. Ore will be hauled to the screening plant. The material will be screened where after the screened material will be moved to the processing plant where the gravel / mineral ore will be processed. Concentrate will be moved to the sorting plant where the concentrate will be sorted.

All data will be consolidated and processed to determine the mineral resources on the property. This will be a continuous process throughout the prospecting work programme.

No feasible alternatives to the drilling pitting and trenching method currently exists. Impacts associated with the prospecting operations will be managed through the implementation of a management plan, developed as part of the application for authorisation.

- **No-go alternative**

The option of not approving the activities will result in a significant loss of valuable information regarding the mineral status (in terms of the minerals applied to be added to the existing prospecting right) present on these properties. Also, the investment made in the current prospecting right will also go to waste.

- **Technology alternatives**

In terms of the technologies proposed, these have been chosen based on the long-term success of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme (Appendix 8) is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

The preferred technology for the proposed mining activity, will be to do pitting and trenching, remove the diamond bearing gravel with an excavator, depositing it in the 10 – 18 feet rotary pan(s) to be washed and sorted. Please find the Prospecting Work Programme attached as Appendix 8.

#### Pros & Cons of the alternative **Dense Media Separation (DMS)**

Advantages	Disadvantages
DMS plants is used mostly for kimberlite deposits	10 times more expensive than Rotary pan
	Water consumption is high
	Operating costs are expensive

In a Dense Media Separation (DMS) plant, powdered ferrosilicon (an alloy of iron and silicone) is suspended in water to form a fluid near the density of diamond (3.52 g/cm<sup>3</sup>), to which the diamond bearing material is added to begin the separation process of the heavier minerals from the lighter material. Additional separation of the denser material occurs by centrifuge in “cyclones” that swirl the mixture at low and high speeds, forcing the diamonds and other dense minerals to the walls and then out the bottom of the cyclone. Wastewater rises at the centre of the cyclones and is sucked out and screened to remove waste particles. The DMS process results in a concentrate that generally weighs less than one percent of the original material fed into the plant at the beginning of the process.

#### Pros & Cons of the alternative **Rotary Pan Plants**

Advantages	Disadvantages
More cost effective	The industry perception that Rotary Pan Plants yield poorer diamond recoveries
Readily available	
Generate more work opportunities	
Consume less water	
Rotary Pan Plants are most often used when mining alluvial deposits	

In a Rotary Pan plant, crushed ore, when prospecting kimberlite, or alluvial gravel and soil is mixed with water to create a liquid slurry called “puddle” which has a density in the 1.3 to 1.5 g/cm<sup>3</sup> range. The mix is stirred in the pan by angled rotating “teeth”. The heavier minerals, or “concentrate”, settle to the bottom and are pushed toward an extraction point, while lighter waste remains suspended and overflows out of the centre of the pan as a separate stream of material. The concentrate, representing just a small percentage of the original kimberlite ore or alluvial gravels, is drawn off for final recovery of the diamonds.

Both methods are in actual fact used for bulk material reduction and require a further process for the final diamond recovery however, for this project the Rotary Pan will be used.

When it comes to dust suppression two main methods were considered, namely molasses stillage and the wetting (water) of roads. The table below provides a short summary of the advantages and disadvantages of each.

Water	Molasses stillage
More cost effective	Much more expensive
Could lead to the depleting of water resources	Requires less water
No damage (only if used excessively)	The product may be toxic to aquatic organisms. (As this product could have physical effects on aquatic organisms for e.g. floating, osmotic damage)
No harm to humans or animals(Only a high quantity will have harm to humans or animals)	Not Hazardous or toxic. Could cause irritation to eyes, skin or when ingested and inhaled.
Non-flammable	Non-flammable
Eye-wash fountains not needed	Eye-wash fountains in the work place are strongly recommended
	Working procedures should be designed to minimize worker exposure to this product.
Basic storing methods	Storing methods are a bit more complicated. Should be stored in a plastic, plastic lined or stainless steel, tight closed containers between 5 and 40 degrees Centigrade.

Considering the above-mentioned information, water will be used for dust suppression purposes.

## 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 detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

### Disclaimer:

*The Public Participation Process (PPP) must follow Regulation 41 of NEMA EIA Regulations; thus, the process needs to be transparent. However, due to the Protection of Personal Information Act (POPIA) which commenced on 01 July 2021, Stakeholders, Landowners, surrounding landowners and registered I&AP' addresses, contact details and comments will not be included in any draft report to be circulated. All this information will form part of the final report to be submitted to the Competent Authority only.*

*Should you be identified as a Stakeholder, Landowner, Surrounding landowner and you do not wish to receive any further communique from Milnex CC regarding the application in question, you may request in writing that your details be removed from the Milnex CC database for this application.*

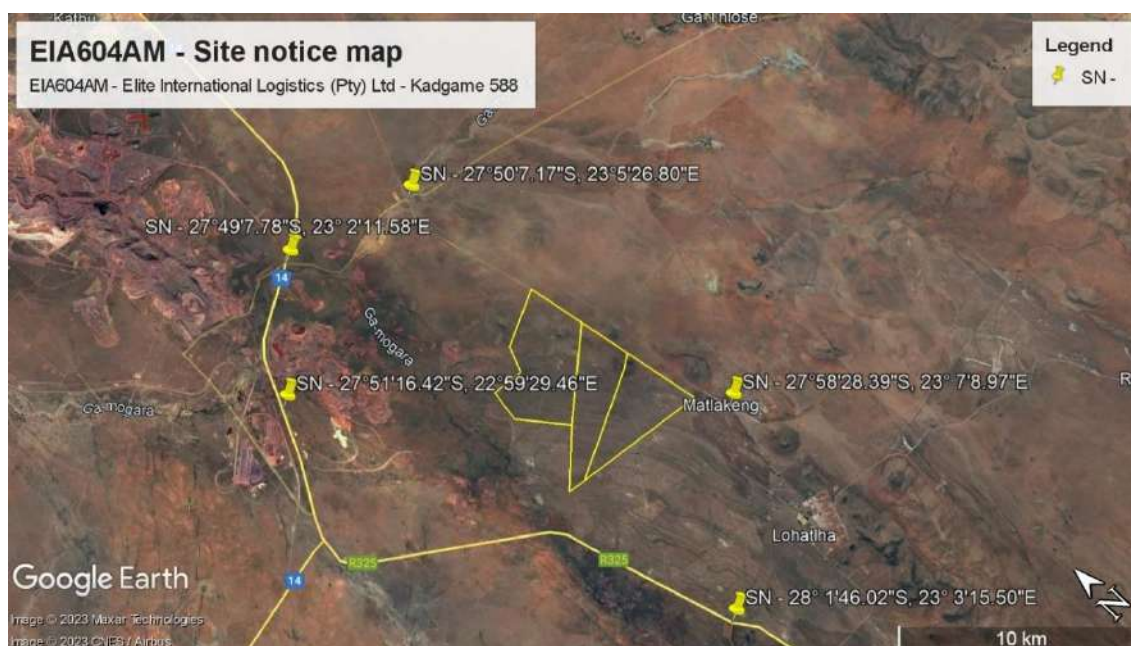
## PUBLIC PARTICIPATION PROCESS

### NEWSPAPER ADVERTISEMENT

An advertisement was placed in English in the local newspaper (**Noordkaap Bulletin**) (see **Appendix 6**) notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with, and submit their comments to Milnex CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement.

### SITE NOTICES

Site notices were placed (as anticipated on the coordinates below) on site in English to inform surrounding communities and immediately adjacent landowners of the proposed development. I&APs will be given the opportunity to raise comments. Photographic evidence of the site notices is available under **Appendix 6**. Below are the coordinates where the site notices were placed:



**Figure 7: Site notice co-ordinates map**

## **DIRECT NOTIFICATION AND CIRCULATION OF SCOPING REPORT TO IDENTIFIED I&APS, SURROUNDING LANDOWNERS AND OCCUPIERS**

Identified I&APs, including key stakeholders representing various sectors, were directly informed of the proposed development and the availability of the Scoping Report via registered post on **the 28<sup>th</sup> of March 2023** and were requested to submit comments on/or before the **02<sup>nd</sup> of May 2023** (30 days).

A copy of the report was also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Thursday and between 07:30AM and 16:00PM on Friday. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**

### **PUBLIC MEETINGS:**

Please note that the Stakeholders & Interested and Affected Parties (I&APs) were informed about the proposed project with the use of press advertisement, registered letters and site notices. Any meetings will be conducted virtually via Zoom or Microsoft Teams **upon request** by the I&APs.

No meeting was requested by stakeholders and/or I&APs to date.

## **DIRECT NOTIFICATION AND CIRCULATION OF DRAFT EIR & EMPR TO IDENTIFIED I&APS, LANDOWNERS AND OCCUPIERS**

Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the Draft EIR & EMPr via registered post on the **29<sup>th</sup> of June 2023** and were requested to submit comments by **31<sup>st</sup> of July 2023**. A copy of the report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Friday. For a complete list of stakeholder details and for proof of registered post see **Appendix 6**.

The consultees included:

**Table 1: List of stakeholders, landowners, and surrounding landowners**

<b>Stakeholders</b>
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (AGRINC)
Department of Economic Development and Tourism (DEDAT)
Department of Co-operative Governance, Human Settlements and Traditional Affairs (COGHSTA)
Department of Roads and Public Works (DR&PW)
Department of Transport, Safety and Liaison (DTSL)
Department of Social Development (DSD)
Northern Cape Tourism Authority
Northern Cape Heritage Resources Authority (NCHRA)



Department of Mineral Resources and Energy (DMRE)
Department of Water and Sanitation (DWS)
ZF Mgcau District Municipality: Municipal manager
Tsantsabane Local Municipality: Municipal manager
Tsantsabane Local Municipality: Ward 1 Councillor
WESSA
SAHRA
<b>Landowner</b>
E & R China Elite International Investments Ltd Incorporated in British Virgin Islands
<b>Surrounding landowners</b>
Department of Rural Development and Land Reform
Slabbert Daniel Jakobus
Duineveld Kruger Boerderye Cc
Leon Marius Venter
Assmang Ltd
Ntsu Trading 601 Pty Ltd
Babatas Communal Property Association
Assmang Ltd

#### **LANDOWNER CONSULTATION**

The above-mentioned prospecting right on the mentioned farm properties has been granted by the DMRE. This application is therefore an amendment to the existing prospecting right. Consultation with the landowner has been conducted from the initial phases of this application and is still in progress for the life of this project.

#### **Issues Raised by Interested and Affected Parties**

Comments received during this period are attached as comment & response report as well as populated in the table of summary of issues raised.



### 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		Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issue and or response where incorporated
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.				
Organisation	Contact person			
Landowners				
Kadgame 1/558, 2/558, 4/558	E & R China Elite International Investments Ltd Incorporated in British Virgin Islands	No comments received.		
Adjacent landowners				
Farm 738 Helpebietjie	Ntsu Trading 601 Pty Ltd Lukas Andries Coetzee	No comments received.		
Mokaning 4/560	Assmang Ltd Desmond Giulio Sacco	No comments received.		
Macarthy 0/559	Assmang Ltd Desmond Giulio Sacco	No comments received.		

<b>Macarthy 1/559</b>	<b>Leon Marius Venter</b>	No comments received.		
<b>Morokwa 0/672</b>	<b>Duineveld Kruger Boerderye Cc</b> Anna Fransina Steyn	No comments received.		
<b>Morokwa 1/672</b>	<b>Slabbert Daniel Jakobus</b>	No comments received.		
<b>Maremane Natuur Reservaat 0/678</b> On behalf of the Republic of South Africa  <b>Department of Rural Development and Land Reform</b>	Northern Cape Manager: <b>Cynthia Nkoane</b>	No comments received.		
<b>Hartnolls 0/458</b>	Babatas Communal Property Association	No comments received.		
<b>Kadgame RE/558</b>	<b>Assmang Ltd</b> Desmond Giulio Sacco Private	No comments received.		
<b>Local Municipality in which jurisdiction the development is located</b>				
<b>Tsantsabane Local Municipality</b>	<b>Municipal Manager:</b> To whom it may concern	No comments received.		

<b>Municipal councillor of the ward in which the site is located</b>				
<b>Tsantsabane Local Municipality</b>	<b>Ward 1 Councillor</b>	No comments received.		
<b>Organs of state having jurisdiction</b>				
<b>Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (AGRINC)</b>	<b>Head of Department:</b> Mr. Lerato Wa Modise	No comments received.		
	Elsabe Swart	No comments received.		
<b>Department of Forestry, Fisheries and Environment (DFFE)</b>	Jacoline Mans	No comments received.		
<b>Department of Economic Development and Tourism (DEDAT)</b>	<b>Head of Department:</b> Mr T Mabija	No comments received.		
<b>Department of Co-operative Governance, Human Settlements and Traditional</b>	<b>Head of Department:</b> Mr Bafedile Lenkoe	No comments received.		

<b>Affairs (COGHSTA)</b>				
<b>Department of Roads and Public Works (DR&amp;PW)</b>	Deputy Information Officer: <b>Head of Department:</b> Dr. Johnny Mac Kay	No comments received.		
<b>Department of Transport, Safety and Liaison (DTSL)</b>	<b>Head of Department</b> Mr. M. Dichaba	No comments received.		
<b>Department of Social Development (DSD)</b>	<b>Head of Department</b> To whom it may concern	No comments received.		
<b>Northern Cape Tourism Authority</b>	<b>Chairperson:</b> To whom it may concern	No comments received.		
<b>Northern Cape Heritage Resources Authority (NCHRA)</b>	Mr Ratha Andrew Timothy and Mrs Rose Kelebogile	No comments received.		
<b>Department of Mineral Resources and Energy (DMRE)</b>	<b>Regional Manager:</b> Mr Ndlelenhle Zindela	No comments received.		
	<b>Secretary:</b> Ms Ntombi Mayekiso	No comments received.		
	<b>Vincent Muila</b>	Email was forwarded to Mr Johannes Nematatani on the 21 <sup>st</sup> of August 2023 by Mr Muila.	Email sent to Mr Muila on the 16 <sup>th</sup> of August 2023. Email stated: <i>“Good day Mr Muila</i>	Appendix 6

			<p><i>I hope you are well.</i></p> <p><i>I would like to enquire about the <b>Section 102/Part 2 Amendment application</b> for Elite International Logistics to amend the existing prospecting right with DMRE Ref: NC30/5/1/1/2/11873PR to include the prospecting of Aluminium Ore (Al), Zinc Ore (Zn), Silicon Ore (Si) and Copper Ore (Cu), Registration Division: Kuruman, Northern Cape. REF: <b>NC-00130-PR/102 (11873PR).</b></i></p> <p><i>The Final Scoping Report for this amendment was submitted to your office on the 08<sup>th</sup> of May 2023, see attached proof. To date, we have not received correspondence from your department regarding this application and would therefore like to request your acknowledgement and feedback on the scoping report submitted and for us to be notified on the responsible</i></p>	
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			<p><i>official for this file given that the timelines are now approaching for the final EIR to be submitted as well.</i></p> <p><i>Your prompt response to this email will be greatly appreciated.</i></p> <p><i>Kind regards.”</i></p>	
<b>Department of Water and Sanitation (DWS)</b>	Mr Khutjo Kwena Sekwaila (WUL Manager)	No comments received.		
	Mudau Mashudu	No comments received.		
<b>Commission on Restitution of Land Rights.</b>	<p><b>Chief Director:</b> Ms. M. Du Toit</p> <p>Natashia Romain</p>	<p>Response letter received from the Land Claims Commission on the 07<sup>th</sup> of June 2023. Response letter stated:</p> <p><i>“We confirm that as the date of this letter no land claims appear on our database in respect of the above-mentioned properties. This includes the database for claims lodged by 31 December 1998; and those lodged between 1 July 2014 and 27 July 2016 in terms of the restitution of Land Rights Amendment Act, 2014.”</i></p>	Land claim enquiry response letter well received from the department	
<b>Other</b>				
<b>WESSA</b>	Graham Avery	No comments received.		

<b>SAHRA</b>				
<b>ZF Mgcawu District Municipality</b>	<b>Municipal Manager:</b> To whom it may concern	No comments received.		

**iv) The environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;**

The baseline environment is described with specific reference to geotechnical conditions, ecological habitat and landscape features, Soil, land capability and agricultural potential, climate and the visual landscape.

**DEA SCREENING REPORT**

According to the DFFE Screening Tool the proposed development area Environmental sensitivity. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

The following summary of the development site environmental sensitivities are identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

**Table 5:** Proposed development area environmental sensitivity (*Screening report*)

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme			X	
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme	X			
Palaeontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Several solar developments with an approved Environmental Authorisation or applications under consideration with 30 km of the proposed area have been identified by the screening report and included in the screening report in Appendix 7 and in Table 6 below:

**Table 6:** Wind and solar developments identified around the project area (*Screening report*)

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/2/820	Solar PV	Approved	12.1
2	12/12/20/1906	Solar PV	Approved	19.3
3	14/12/16/3/3/2/819/AM2	Solar PV	Approved	12.1
4	14/12/16/3/3/2/1109	Solar PV	Approved	29.5.



5	12/12/20/1994/2	Solar PV	Approved	29.9
6	12/12/20/1994/1	Solar PV	Approved	29.9
7	14/12/16/3/3/2/698	Solar PV	Approved	18.4
8	14/12/16/3/3/2/1082	Solar PV	Approved	12.1
9	14/12/16/3/3/2/819	Solar PV	Approved	15.4
10	12/12/20/1994/3	Solar PV	Approved	29.9
11	12/12/20/1994	Solar PV	Approved	29.9
12	14/12/16/3/3/2/911	Solar PV	Approved	15.4

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

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

**Geology and Soils**

The rock stratigraphy within the Griqualand West depository, forms part of early Proterozoic-Transvaal Supergroup sequence. The Postmasburg Manganese Field is located along the western margin of the Kaapvaal Craton and on the eastern limb of the Maremane Dome. In Griqualand West the succession can be broadly subdivided into a basal, chemical sedimentary unit, referred to as the Ghaap Group, which is overlain by a mixed volcanic-clastic-chemical sequence, known as the Postmasburg Group (Table 1). The Ghaap and Postmasburg Groups represent two separate, major unconformity-bounded sequences (Cheney and Winter, 1995).

According to Beukes (1983 and 1987), deposition of the Transvaal sequence in Griqualand West took place on a continental margin or trailing edge was controlled by three tectonic-sedimentary elements:

- A shallow water platform on the kaapvaal Craton.
- A platform edge (shelf margin) located parallel to the Griqualandtown fault zone (A growth fault across which there are a number of facies changes).
- A deep basin along the western margin of the Kaapvaal Craton.

The Ghaap Group is subdivided, from the base upward, into the Schmidtsdrift Subgroup (interbedded siliclastics and carbonates), the Campbellrand Subgroup (carbonates), the Asbesheuwel Subgroup (iron formation) and the Koegas Subgroup (interbedded siliclastics and iron formations) (Table1 and Fig1).

Carbonates from the Schmidtsdrif Subgroup have been dated at  $2557 \pm 49$  MA by Pb-Pb method (Jahn et al, 1990). The lower Asbesheuwel Subgroup (Kuruman Iron Formation) has been dated at  $2432 \pm 31$ Ma using single zircons from ash beds (Trendall et al, 1990).

The basal Schmidtsdrif Subgroup comprises fluviially deposited feldspatic quartz arenites, shallow marine and intertidal quartz arenites as well as a platform carbonate sequence (Beukes, 1979). The Campbellrand Subgroup consists of stromaolitic dolomite and limestone platform facies, which interfingers down the slope with carbonate turbidites (Fig. 4), The turbidites have been ankerized and silicified to form banded ferruginous cherts. Towards the south the turbidites interfinger with carbonaceous shale (Prieska facies) which, according to Beukes, relates to deposition within an euxinic basin, in front of the carbonate platform. Shallow water carbonate deposition was terminated during a major transgression, which drowned the shelf, resulting in a fairly sudden transition from carbonates through chert and into the banded iron formation of the Asbesheuwel Subgroup

Beukes, 1978 subdivided the Asbesheuwel Subgroup into the Kuruman Iron Formation at the base followed by the Griquatown Iron Formation at the top (Table 1). According to Beukes the Kuruman Iron formation was deposited within a deep shelf setting over the entire Kaapvaal Craton. It comprises an upward-shallowing sequence consisting of carbonaceous shale deposited in an euxinic basin and the open shelf. Magnetic-hematite-chert micro banded rhythmite macrocycles containing interbedded stilpnomelane band-lutites, were deposited on the deep open shelf, while greenalite-siderite rhythmites mark the toe-of-slope and slope areas of a shallow water platform. The Ouplaas Member, which marks the top of the Kuruman Iron Formation, represents a clastic-textured shallow-water platform deposit (Beukes, 1983 and 1984).

The Griquatown Iron Formation overlies the Kuruman Iron Formation and consists of upward coarsening megacycles, deposited in environments that vary from low energy, subtidal to high energy, intertidal and lagoonal settings.

Justification as to why the geological formation supports the possibility that the minerals applied for could be found therein.

According to the projects PWP, the farms are located approximately 16 km towards the south-east of the Sishen Iron Ore Mine and easily accessible via the Kathu-Postmasburg bitumen road. The geologist appointed by the applicant has indicated that diamonds, gold, gemstones (except diamonds), Aluminium ore, zinc ore, silicone ore and copper ore may be found on this property.

The farm is bounded toward the north by the farm Helpebietjie 738. The eastern boundary is shared with the Lohatla Battle school. The farm is bounded by the farm Macarthy 559 along the western boundary.

The topography toward the eastern farm boundary is defined by an arc of high ground. Two detached circular hills represent prominent topographic features. Surface elevations varies between 1260m along the dolomite flats to 1340m above mean sea level on the hill tops. The higher ground relates to BIF breccia and Wolhaarkop outcrops that build ridges. Hill slopes are covered in iron and chert detrital fans. The low land is covered in sand and dolomite patches.

The vegetation towards the high ground in the east comprises a sandy grassland, marked with the presence of large camel thorne trees (*Acacia erioloba*). The vegetation towards the west embraces a dense “Swarthaak” (*Acacia detinens*) cover.

#### **Results of the environmental sensitivity of the proposed area (Screening tool)**

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification.

#### **Ecological habitat and landscape features**

The ecological information for the proposed project area was sourced from the desktop Ecological Fauna and Flora habitat survey compiled by Danie Labuschagne.

The proposed project area is overlain by the Kuruman thornveld (SVk 9) and the kuruman mountain bushveld (SVk10).

### **SVk 9 Kuruman Thornveld**

**Distribution:** In South Africa the Kuruman Thornveld is found at the North West and Northern Cape Provinces. Kuruman Thornveld occurs on the flats from the vicinity of Postmasburg and Danielskuil (here west of the Kuruman Hills) in the south extending via Kuruman to Tsineng and Dewar in the north. Altitude is 1100 – 1500 m (Mucina & Rutherford, 2006).

**Vegetation and landscape features:** Flat rocky plains and some sloping hills with very well-developed, closed shrub layer and well-developed open tree stratum consisting of *Acacia erioloba* (Mucina & Rutherford, 2006).

**Geology and soils:** Some Campbell Group dolomite and chert and mostly younger, superficial Kalahari Group sediments, with red wind-blown (0.3 – 1.2 m deep) sand. Locally, rocky pavements are formed in places. Most important land types Ae, Ai, Ag and Ah, with Hutton soil form (Mucina & Rutherford, 2006).

**Climate:** Summer and autumn rainfall with very dry winters. Mean annual precipitation (MAP) about 300-450 mm. Frost frequent in winter (Mucina & Rutherford, 2006).

**Important taxa:** Tall tree: *Acacia erioloba*. Small trees: *Acacia mellifera* subsp. *detinens*, *Boscia albitrunca*. Tall Shrubs: *Grewia flava*, *Lycium hirsutum*, *Tarchonanthus camphoratus*, *Gymnosporia buxifolia*. Low Shrubs: *Acacia hebeclada* subsp. *hebeclada*. *Monechma divaricatum*, *Gnidia polycephala*, *Helichrysum zeyheri*, *Hermannia comosa*, *Pentzia calcarea*, *Plinthus sericeus*. Geoxylic Suffrutex: *Elephantorrhiza elephantina*. Graminoids: *Aristida meridionalis*, *Aristida stipitata* subsp. *stipitata*, *Eragrostis lehmanniana*, *Eragrostis echinocloidea*, *Melinis repens*. Herbs: *Dicoma schinzii*, *Gisekia africana*, *Harpagophytum procumbens* subsp. *procumbens*, *Indigofera daleoides*, *Limeum fenestratum*, *Nolletia ciliaris*, *Seddera capensis*, *Tripteris aghillana*, *Vahlia capensis* subsp. *vulgaris*.

### **SVk 10 Kuruman Mountain Bushveld**

**Distribution:** In South Africa the Kuruman Mountain Bushveld is found in the Northern Cape and North West Provinces from the Asbestos Mountains southwest and northwest of Griekwastad, along the Kuruman Hills north of Danielskuil, passing west of Kuruman town and re-emerging as isolated hills, i.e. Makhubung and the hills around Pomfret in the north. Altitude ranges from 1100-1800 m (Mucina & Rutherford, 2006).

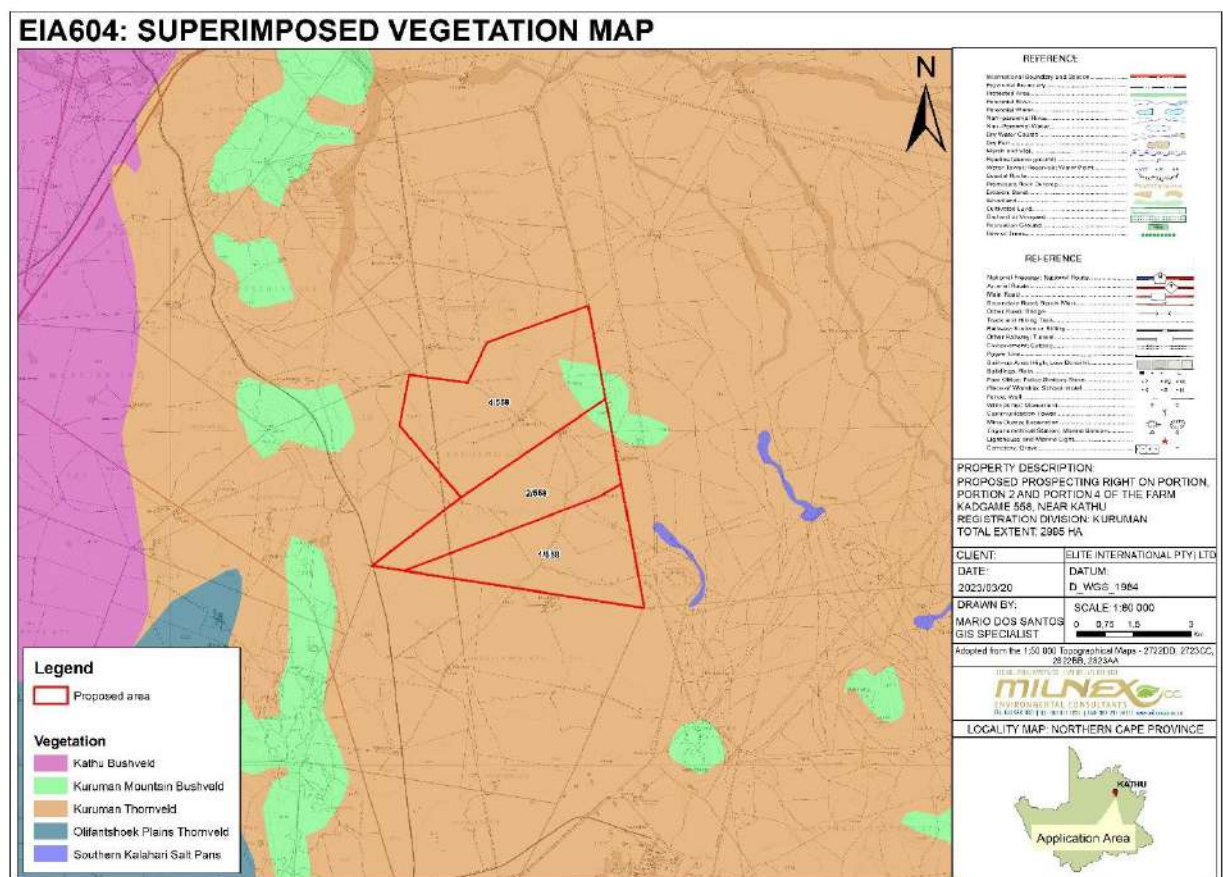
**Vegetation and Landscape features:** Rolling hills with generally gentle to moderate slopes and hill pediment areas with an open shrubveld with *Lebeckia micrantha* prominent in places. Grass layer is well-developed (Mucina & Rutherford, 2006).

**Geology and soils:** The Kuruman and Asbestos Hills consist of banded iron formation, with jaspilite, chert and riebeckite-asbestos of the Asbestos Hills Subgroup of the Griqualand West Supergroup (Vaalian). Most common landtype is Ib, followed by Ae, Ic and Ag. Soils are shallow sandy soils, of the Hutton form (Mucina & Rutherford, 2006).

**Climate:** Climate of Kuruman Mountain Bushveld is characterised by summer and autumn rainfall with very dry winters. Mean annual precipitation is about 250-500 mm (Mucina & Rutherford, 2006).

Important taxa: Small tree: *Searsia lancea*. Tall shrubs: *Diospyros austro-africana*, *Euclea crispa* subsp. *crispa*, *Euclea undulata*, *Olea europaea* subsp. *africana*, *Searsia pyroides* var. *pyroides*, *Searsia tridactyla*, *Tarchonanthus camphoratus*, *Tephrosia longipes*. Low Shrubs: *Searsia ciliata*, *Amphiglossa triflora*, *Anthospermum rigidum* subsp. *pumilum*, *Gomphocarpus fruticosus* subsp. *fruticosus*, *Helichrysum zeyheri*, *Lantana rugosa*, *Wahlenbergia nodosa*. Succulent shrubs: *Ebracteola wilmaniae*, *Hertia pallens*. Herbaceous climber: *Rhyncosia totta*. Graminoids: *Andropogon chinensis*, *Andropogon schirensis*, *Antheophora pubescens*, *Aristida congesta*, *Digitaria eriantha* subsp. *eriantha*. *Themeda triandra*, *Triraphis andropogonoides*, *Aristida diffusa*, *Brachiaria nigropedata*, *Bulbostylis burchellii*, *Cymbopogon caesius*, *Diheteropogon amplexans*, *Elionurus muticus*, *Eragrostis chloromelas*, *Eragrostis nindensis*, *Eustachys paspaloides*, *Heteropogon contortus*, *Melinis repens*, *Schizachyrium sanguineum*, *Trichoneura grandiglumis*. Herbs: *Dicoma anomala*, *Dicoma schinzii*, *Geigeria ornativa*, *Helichrysum cerastioides*, *Heliotropium strigosum*, *Hibiscus marlothianus*, *Kohautia cynanchica*, *Kyphocarpa angustifolia*. Geophytic herbs: *Boophone disticha*, *Pellaea calomelanos*.

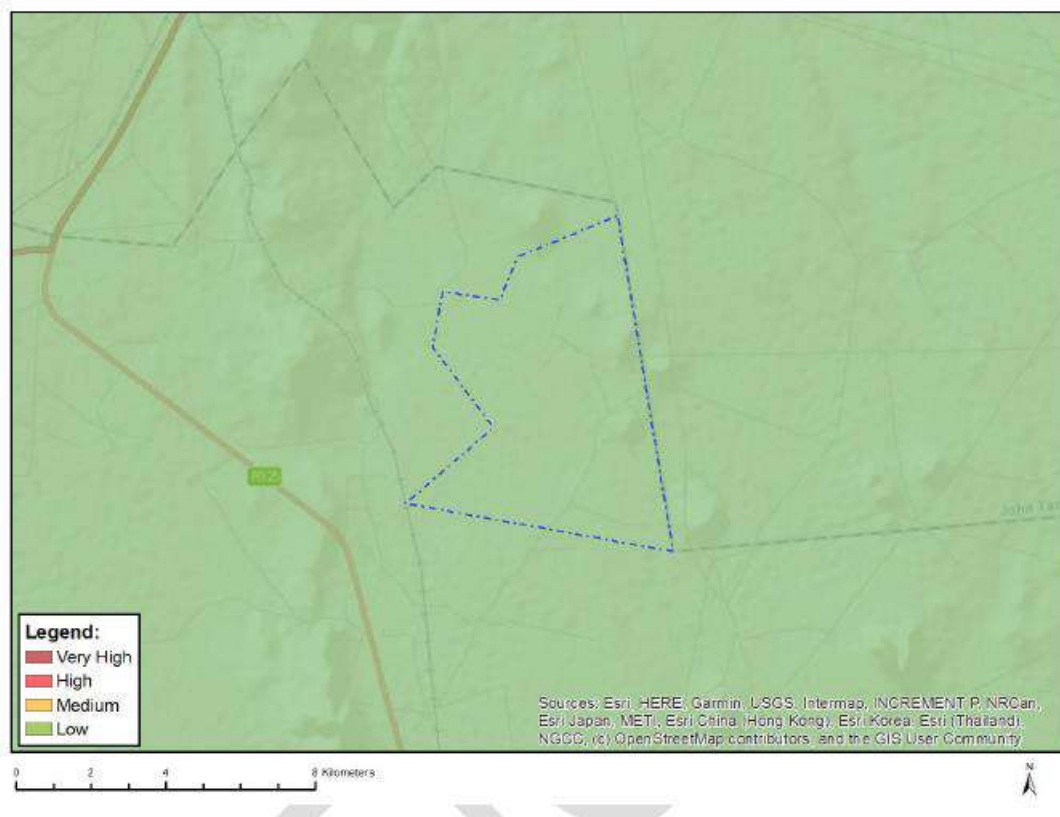
Upper Gariep Alluvial Vegetation has a conservation which is vulnerable with a target of 31%. Only about 3% statutorily conserved in Tussen Die Riviere, Gariep Dam and Oviston Nature Reserve. More than 20% transformation for cultivation (vegetable grapes) and building of dams. Exotic woody species such as *Salix babylonica*, *Eucalyptus camaldulensis*, *E. sideroxylon*, *Prosopis* and *Populus* species have become common dominants in patches of heavily disturbed alluvial vegetation (Mucina and Rutherford, 2006:639-640).



**Figure 8:** Vegetation Unit Map

According to the DEA Screening Tool the Plant Species theme sensitivity of the proposed area falls in Low sensitivity. Please see **Appendix 7** for the colour map.

#### MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY

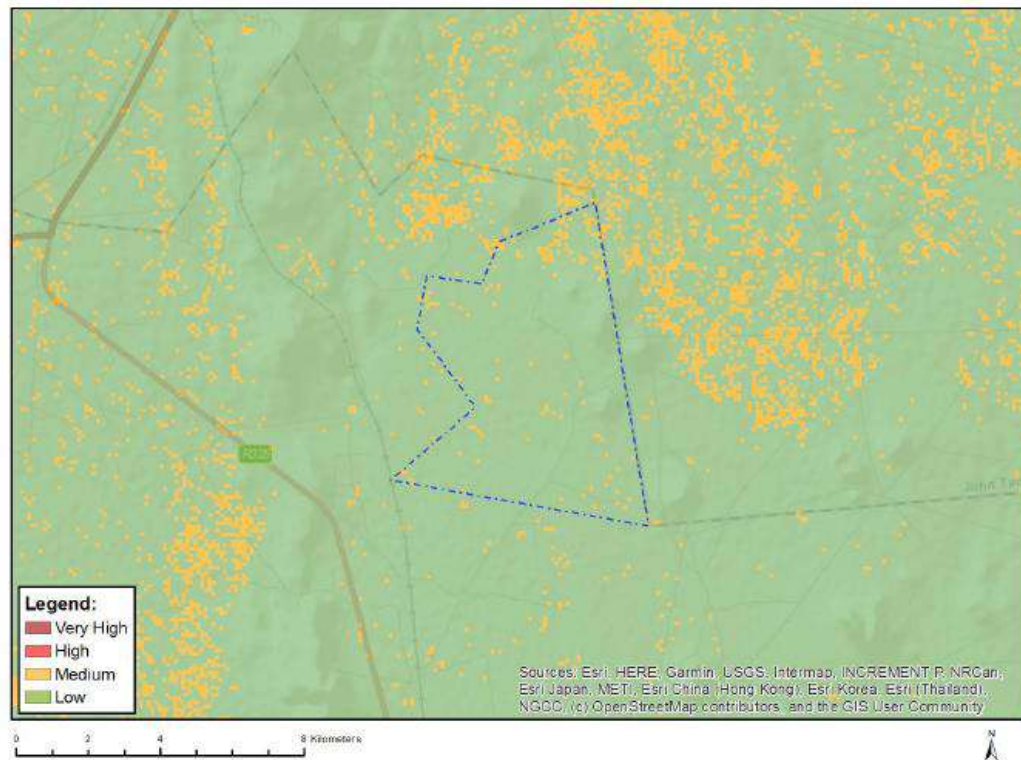


**Figure 9:** Plant Species Combined Sensitivity

According to the DEA Screening Tool the Agriculture theme sensitivity of the proposed area falls mostly within sensitivity low and to a lesser extent medium sensitivity. Please see **Appendix 7** for the colour map.



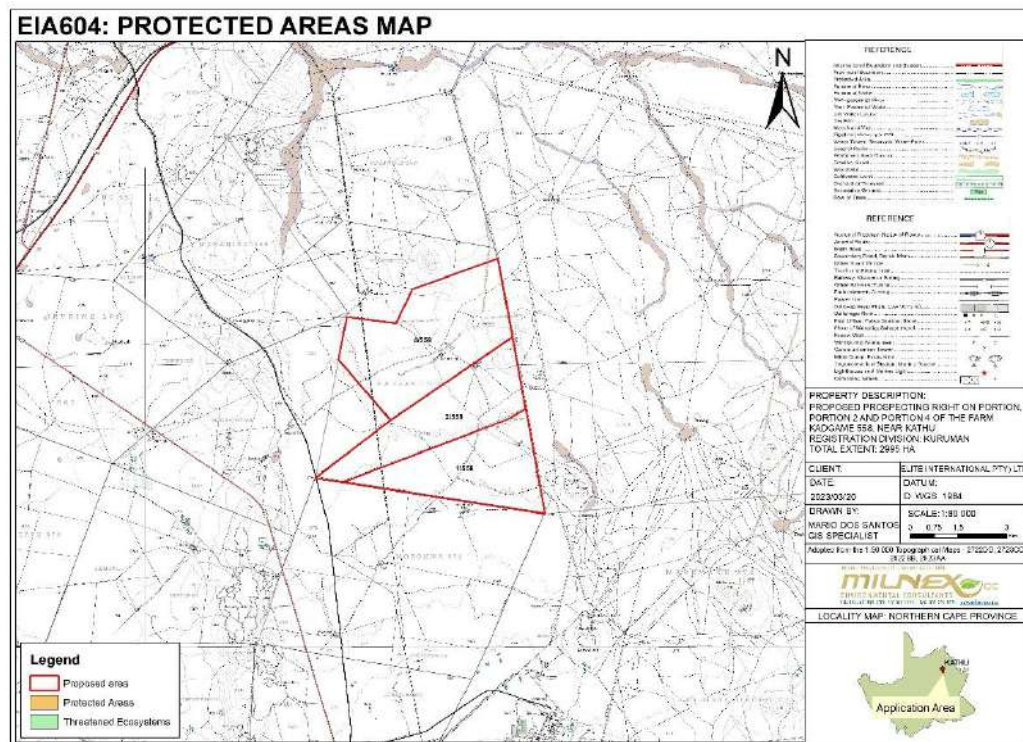
## MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



**Figure 10: Agriculture Combined Sensitivity**

## PROTECTED AREAS

According to the data for protected areas (**Figure 11**), the proposed area does not fall within a formally protected area.



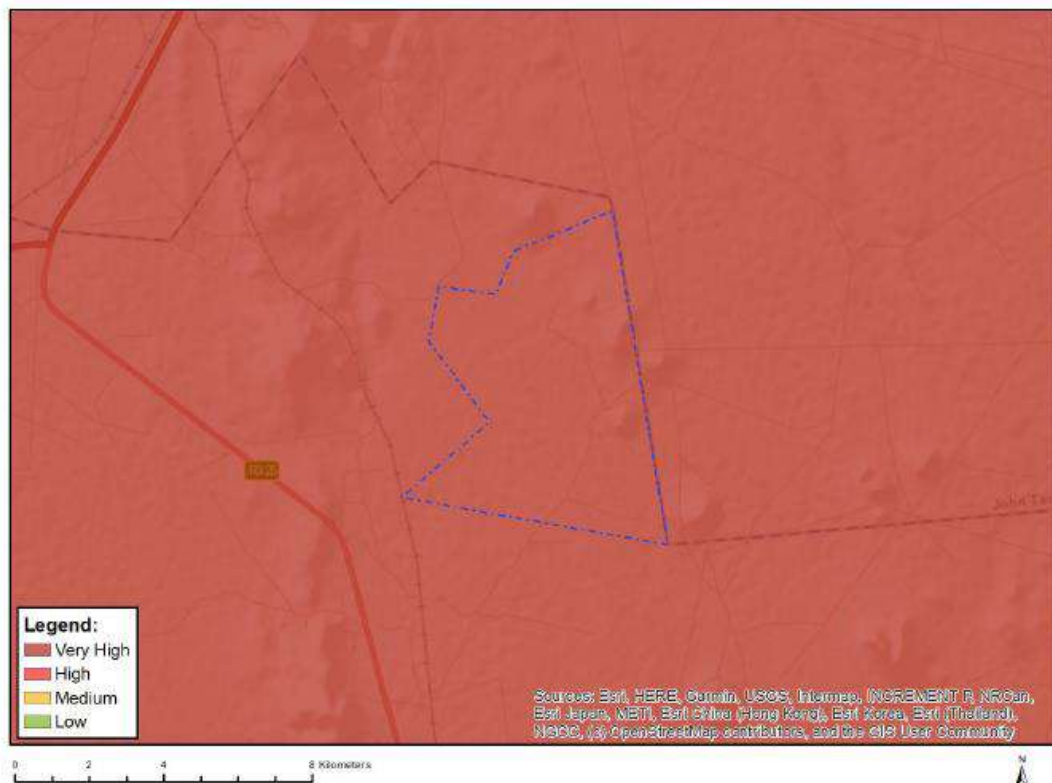
**Figure 11: Threatened and Protected Areas Map**





According to the DFFE Screening Report most of the proposed area falls mostly within very high Aquatic Biodiversity sensitivity with features including the Strategic water source areas as well as wetlands and estuaries. Refer to the figure below and **Appendix 7** for the colour map.

#### MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



#### Sensitivity Features:

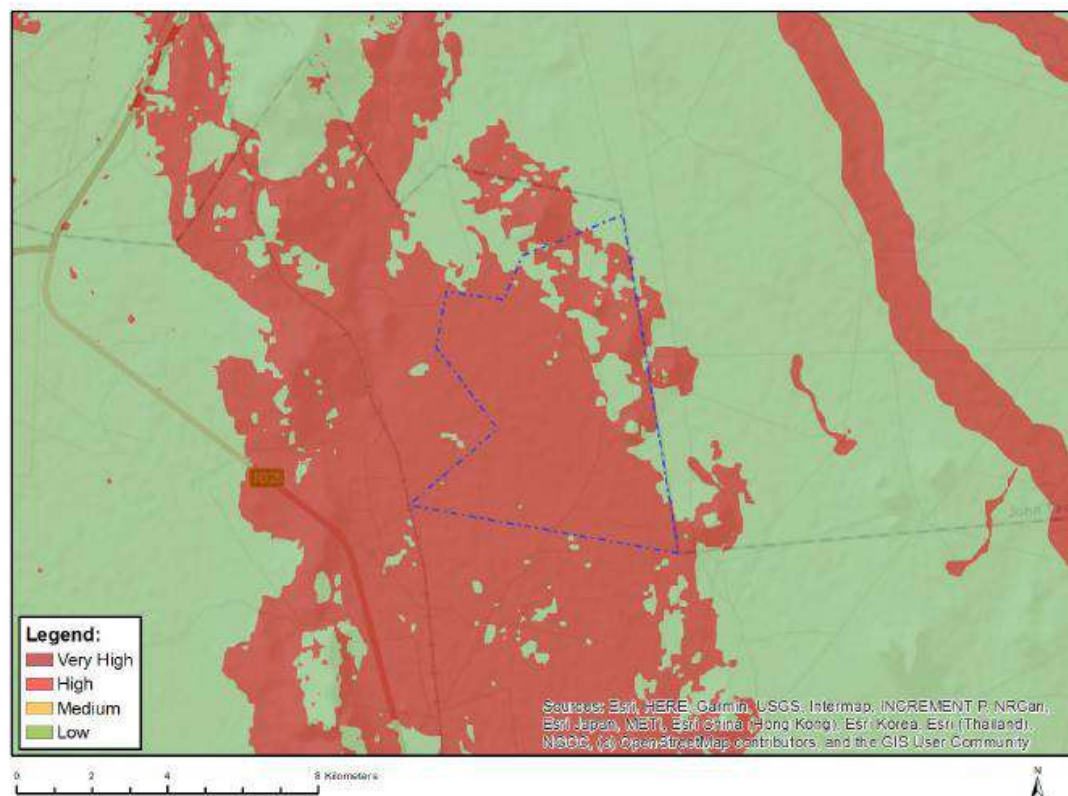
Sensitivity	Feature(s)
Very High	Strategic water source area
Very High	Wetlands and Estuaries

**Figure 13:** Aquatic Biodiversity Combined Sensitivity

The DFFE Screening Report shows that the proposed area falls mostly within very high Terrestrial Biodiversity theme sensitivity followed by low sensitivity. Please see Figure 14 below and **Appendix 7** for the colour map.



## MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



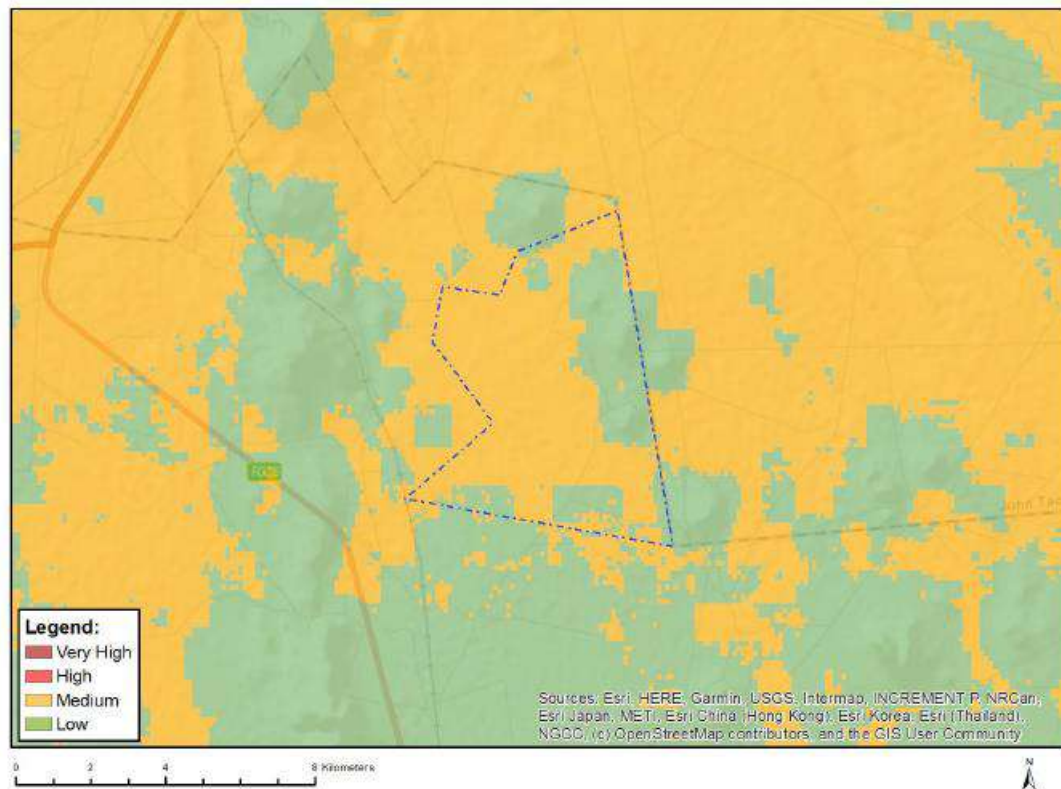
### Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Ecological support area

**Figure 14:** Terrestrial Biodiversity Combined Sensitivity

According to the DFFE Screening Report the proposed portions fall within medium and low Animal Species theme sensitivity. Please see figure 15 and **Appendix 7** for the colour map.

## MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



**Figure 15:** Animal Species theme sensitivity

### **Biodiversity Priority Areas for Mining**

The Mining and Biodiversity Guideline was developed in 2013 for the purpose of mainstreaming biodiversity management practices into the mining sector (DEA, DMR, Chamber of Mines, SAMBF & SANBI 2013). This Guideline provides explicit direction in terms of where mining-related impacts are legally prohibited, where biodiversity priority areas may present high risks for mining projects, and where biodiversity may limit the potential for mining. The Guideline distinguishes between four categories of biodiversity priority areas in relation to their importance from a biodiversity and ecosystem service perspective as well as the implications for mining in these areas (**Table 2**).

**Table 2:** Four categories of biodiversity priority areas in relation to their biodiversity importance and implications for mining.

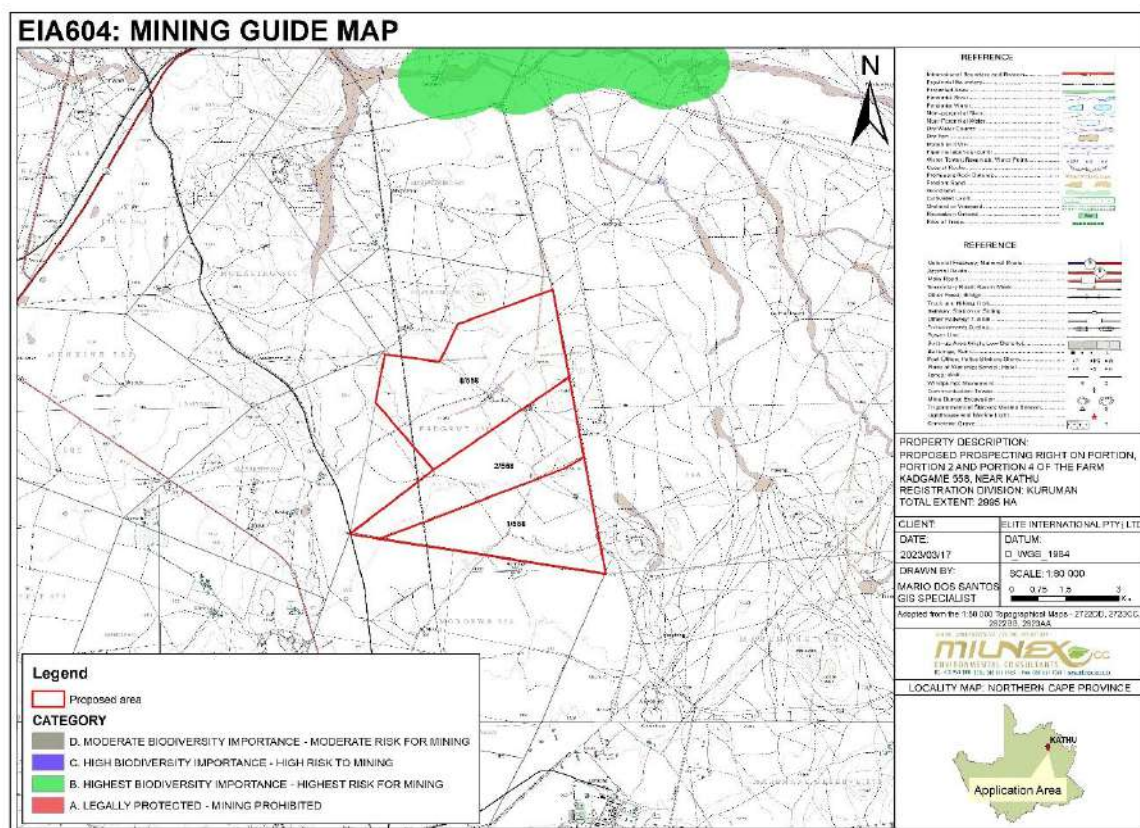
Category	Biodiversity Priority Areas	Risks for Mining	Implications for Mining
----------	-----------------------------	------------------	-------------------------

<p><b>A. Legally Protected</b></p>	<ul style="list-style-type: none"> <li>Protected areas (including National Parks, Nature Reserves, World Heritage Sites, Protected Environments, Nature Reserves)</li> <li>Areas declared under Section 49 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002)</li> </ul>	<p><b>Mining Prohibited</b></p>	<p>Mining projects cannot commence as mining is legally prohibited. Although mining is prohibited in Protected Areas, it may be allowed in Protected Environments if both the Minister of Mineral Resources and Minister of Environmental Affairs approve it.</p> <p>In cases where mining activities were conducted lawfully in protected areas before Section 48 of the Protected Areas Act (No. 57 of 2003) came into effect, the Minister of Environmental Affairs may, after consulting with the Minister of Mineral Resources, allow such mining activities to continue, subject to prescribed conditions that reduce environmental impacts.</p>
<p><b>B. Highest Biodiversity Importance</b></p>	<ul style="list-style-type: none"> <li>Critically endangered and endangered ecosystems</li> <li>Critical Biodiversity Areas (or equivalent areas) from provincial spatial biodiversity plans</li> <li>River and wetland Freshwater Ecosystem Priority Areas (FEPAs) and a 1km buffer around these FEPAs</li> <li>Ramsar Sites</li> </ul>	<p><b>Highest Risk for Mining</b></p>	<p>Environmental screening, environmental impact assessment (EIA) and their associated biodiversity specialist studies should focus on confirming the presence and significance of these biodiversity features, and to provide site-specific basis on which to apply the mitigation hierarchy to inform regulatory decision-making for mining, water use licences, and environmental authorisations.</p> <p>If they are confirmed, the likelihood of a fatal flaw for new mining projects is very high because of the significance of the biodiversity features in these areas and the associated ecosystem services. These areas are viewed as necessary to ensure protection of biodiversity, environmental sustainability, and human well-being.</p> <p>An EIA should include the strategic assessment of optimum, sustainable land use for an area and will determine the significance of the impact on biodiversity.</p>

			<p>This assessment should fully consider the environmental sensitivity of the area, the overall environmental and socio-economic costs and benefits of mining, as well as the potential strategic importance of the minerals to the country.</p> <p>Authorisations may well not be granted. If granted, the authorisation may set limits on allowed activities and impacts and may specify biodiversity offsets that would be written into licence agreements and/or authorisations.</p>
<b>C. High Biodiversity Importance</b>	<ul style="list-style-type: none"> <li>Protected area buffers (including buffers around National Parks, World Heritage Sites* and Nature Reserves)</li> <li>Transfrontier Conservation Areas (remaining areas outside of formally proclaimed protected areas)</li> <li>Other identified priorities from provincial spatial biodiversity plans</li> <li>High water yield areas</li> <li>Coastal Protection Zone</li> <li>Estuarine functional zone</li> </ul> <p>*Note that the status of buffer areas of World Heritage Sites is subject to a current intra-governmental process</p>	<b>High Risk for Mining</b>	<p>These areas are important for conserving biodiversity, for supporting or buffering other biodiversity priority areas, and for maintaining important ecosystem services for communities or the country.</p> <p>An EIA should include an assessment of optimum, sustainable land use for an area and will determine the significance of the impact on biodiversity.</p> <p>Mining options may be limited in these areas, and limitations for mining projects are possible.</p> <p>Authorisations may set limits and specify biodiversity offsets that would be written into licence agreements and/or authorisations.</p>
<b>D. Moderate Biodiversity Importance</b>	<ul style="list-style-type: none"> <li>Ecological support areas</li> <li>Vulnerable ecosystems</li> <li>Focus areas for protected area</li> </ul>	<b>Moderate Risk for Mining</b>	<p>These areas are of moderate biodiversity value.</p> <p>EIAs and their associated specialist studies should focus on confirming the presence and significance of these biodiversity features,</p>

	expansion (land-based and offshore protection)	identifying features (e.g. threatened (land-based and offshore protection) species) not included in the existing datasets, and on providing site-specific information to guide the application of the mitigation hierarchy.
		Authorisations may set limits and specify biodiversity offsets that would be written into licence agreements and/or authorisations.

Based on **Figure 16**, the area does not overlap with any category for the biodiversity area for mining.



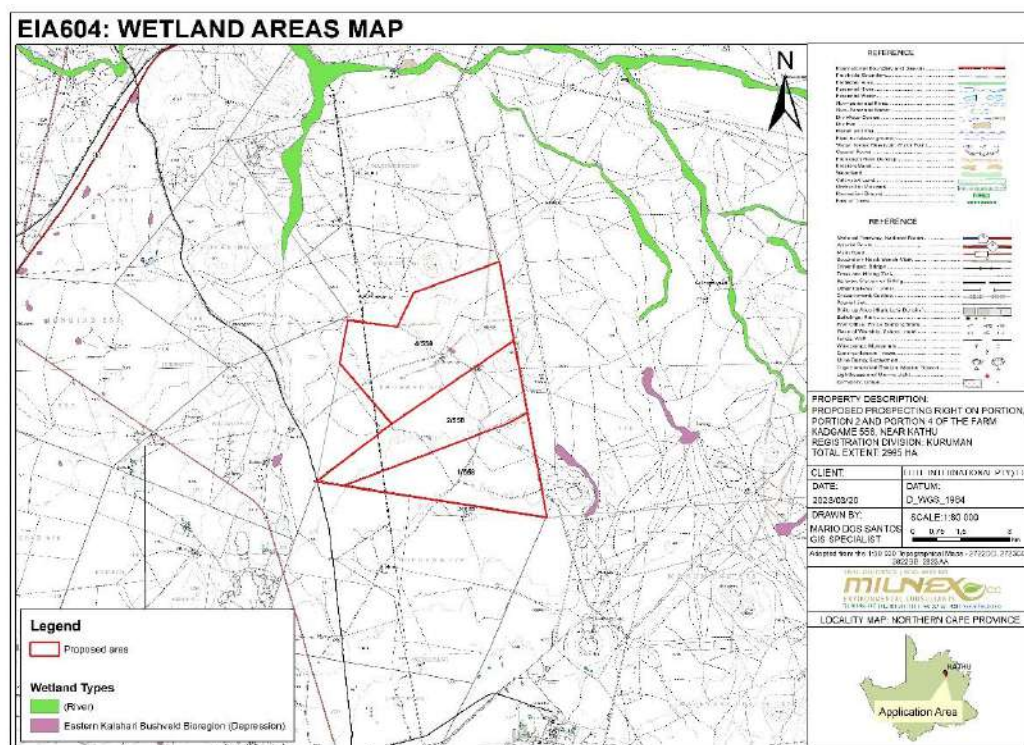
**Figure 16:** Biodiversity priority areas, in accordance with the Mining of Biodiversity Guidelines, associated with the study site.

### **Wetland Areas**

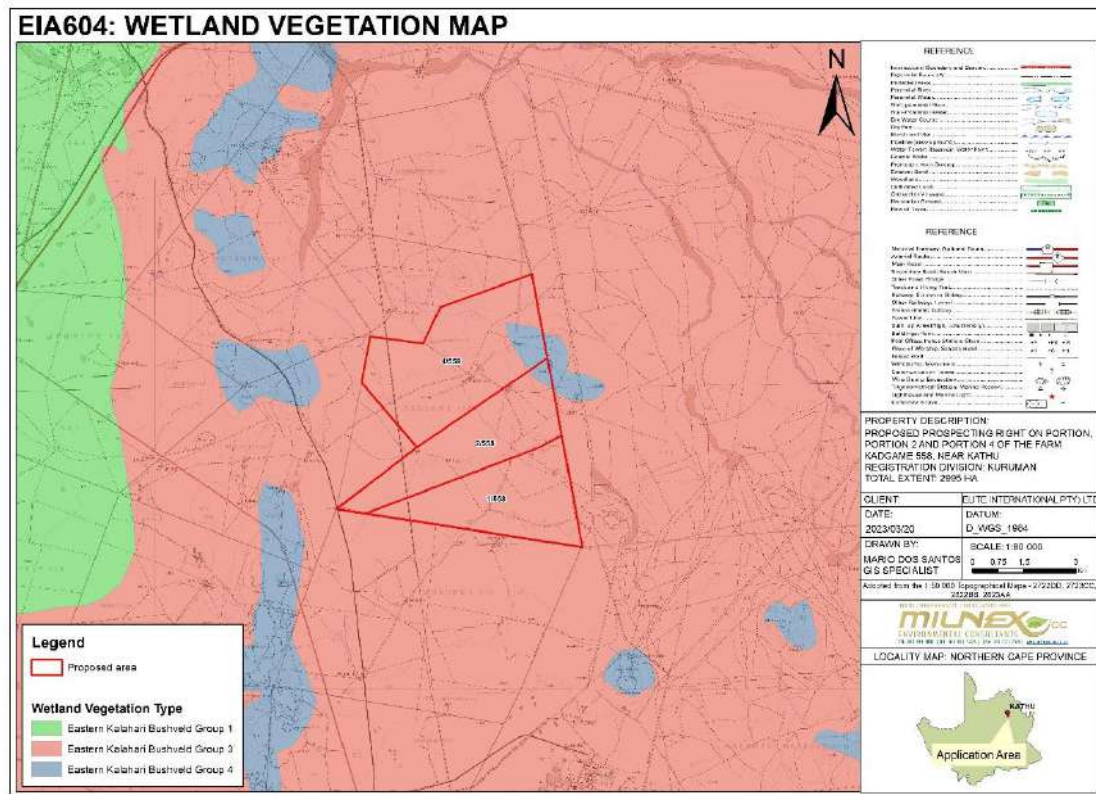
In terms of Section 1 of the National Water Act (No. 36 of 1998) (NWA), wetlands are legally defined as: “*land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil*” (NWA 1998).



A wide variety of wetland types are present in South Africa, and can be classified into six broad types, namely floodplain wetlands, unchannelled valley bottom wetlands, channelled valley bottom wetlands, seeps, depressions and wetland flats. Owing to the large variations in climate and topography across South Africa, vegetation and habitat associated with these wetland types vary tremendously from subtropical reed beds and tall swamp forests to arid salt pans, which all support unique and varied animal life.



The Wetland vegetation that the site has been associated with the Eastern Kalahari Bushveld Group 3 and 4 as depicted in the figure below.



**Figure 18:** Wetland vegetation type

## **DESCRIPTION OF THE SOCIO-ECONOMIC ENVIRONMENT**

- Socio-economic conditions

### **ZF Mqcowu District Municipality**

The ZF Mqcowu District Municipality (previously Siyanda District Municipality) is a Category C municipality forming the mid-northern section of the Northern Cape Province, bordering with Botswana in the north and Namibia in the west.

It makes up just under a third of the province's geographical area, of which 65 000km<sup>2</sup> comprise the vast Kalahari Desert, Kgalagadi Transfrontier Park and the former Bushmanland. This district comprises five local municipalities: Dawid Kruiper, Kai !Garib, Tsantsabane, !Kheis and Kgatelopele. Upington is the district municipal capital, where the municipal government is located.

### **Tsatsabane Local Municipality**

The Tsantsabane Local Municipality is a Category B municipality located within the north-eastern part of the Northern Cape Province in the ZF Mqcowu District. It is one of the five municipalities in the district. The nearest business centre is Kimberley, which is about 200km away.

Three main traffic routes provide access to other cities, namely Johannesburg via Kuruman, and the Kalahari and Cape Town via Kimberley. The rest of the Tsantsabane Municipality area comprises Boichoko, Postdene, New Town, Stasie, Groen Water, Skyfontein, Jean Heaven, Marenane (the newly established settlement brought about by the land redistribution), and the well-known Lohattha Army Battle School.

Economically, Tsantsabane is known for being rich in minerals, and for its mining, agriculture, manufacturing and farming sectors. Tsantsabane has reinvented itself over the years as one of the leading investment hot spots in the Northern Cape. The construction of the Anglo American Kumba Iron Ore's Kolomela Mine has brought an implosion of development to the area.

### Key statistics summary

#### Demographic Information

	2016	2011
<b>Population</b>	39 345	35 093
<b>Age Structure</b>		
Population under 15	25.9%	27.9%
Population 15 to 64	69.9%	67.6%
Population over 65	4.2%	4.4%
<b>Dependency Ratio</b>		
Per 100 (15-64)	43.0	47.8
<b>Sex Ratio</b>		
Males per 100 females	115.5	109.8
<b>Population Growth</b>		
Per annum	2.60%	n/a
<b>Labour Market</b>		
Unemployment rate (official)	n/a	26.1%
Youth unemployment rate (official) 15-34	n/a	32.3%
<b>Education (aged 20 +)</b>		
No schooling	7.3%	13.7%
Matric	34.9%	25.3%
Higher education	4.4%	6.3%
<b>Household Dynamics</b>		
Households	11 821	9 839
Average household size	3.3	3.5
Female headed households	32.0%	31.3%
Formal dwellings	77.9%	71.8%
Housing owned	67.5%	44.7%
<b>Household Services</b>		
Flush toilet connected to sewerage	76.1%	66.7%
Weekly refuse removal	52.5%	57.4%
Piped water inside dwelling	44.6%	45.3%
Electricity for lighting	84.9%	83.5%



## Population Census 2011

Table 2: Tsatsabane LM's population by gender

	Male	% Male	Female	%Females	Total
Black African	9939	54	8589	46	18528
Colored	6564	50	6620	50	13184
Indian or Asian	185	82	39	18	224
White	1506	51	1427	49	2933
Other	169	76	54	24	224
Total	18363	52	16730	48	35093

The municipality has more men than women, which may be related to the area's abundance of mines and the male-dominated employment sector. Out of the entire population, 54% of men are black, 36% are colored, 8% are white, and 1% are Indian. In the municipal region, there are 51% black African women, followed by 40% colored women, and 9% white women, as shown in Table 2 above.

## Economic analysis

Local government is mandated to create the necessary conditions for economic growth and job creation. The municipal area plays an important role in the economy of the region/province, as it is located in the Gamagara Corridor.

The macro environment influences the market or industry in which a business is operating. The market or industry analysis gives a better understanding of the market or players in the industry, showing who the market leaders are. The influence, positive or negative, can impact local business conditions because of several factors such as the decrease in expenditure, equipment, retrenchment, or general working conditions such as overtime which ultimately affects disposable income of the employees. The opposite can also be a reality, meaning the expansion in the mining industry can create many business opportunities for entrepreneurs and therefore also more job opportunities (Bec, et al., 2015).

The mining industry can have a great impact (positive and negative) on other industries. A mining town like Postmasburg, has had a positive business impact from mining the last few years because of a new mine (Kolomela) starting with construction near the town in the middle of 2008. The older mine, Assmang Beeshoek, has a constant impact on the town because the mine was established many years ago (1968) and moved all the workers into the town.

## **CULTURAL AND HERITAGE ASPECTS**

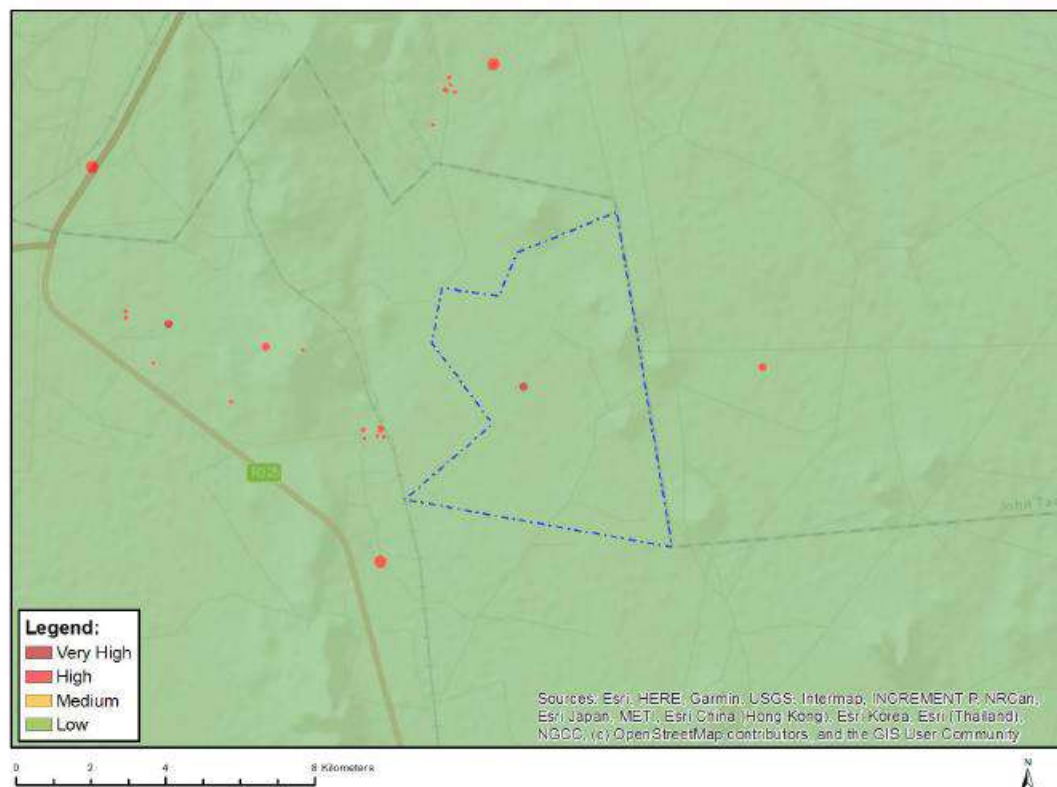
According to the DFFE Screening Report the proposed area falls mostly within low Archaeological and Cultural Heritage Theme Sensitivity and a certain area within very high sensitivity. Please see Figure 19 below and the colour map under **Appendix 7**.

The Phase I Cultural Heritage Resources Impact Assessment conducted for the proposed project area mentions that the site is mostly covered by dense grass, shrubs and tree vegetation. As very little grazing has taken place in the area the dense vegetation made visibility on the ground difficult. During the inspection two remains of farm settlements were

recorded. The first one is near the existing mine offices at S27° 55' 14.4" & E23° 05' 33.7". This complex consists of a number of buildings dating to the 1960/70's. The second settlement is at S27° 55' 06.4" & E23° 04' 58.0". Though the house has been extensively altered on the outside the original structures has survived and dates to the 1950's. A relative modern milking shed dating to the 1980's is at S27° 56' 35.7" & E23° 06' 14.4".

The only structure older than sixty years is the 1950's farmhouse. Unfortunately, it has been totally altered. It is given a field rating IV C. No other important cultural heritage resources or graves were found. There is no objection to the proposed development from a cultural heritage resources point of view. It is therefore recommended by the specialist that, if during construction any cultural heritage resources or graves are unearthed all work has to be stopped until the site has been inspected and mitigated by a cultural heritage practitioner. Please refer to **Appendix 10** for the specialist study.

### MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



#### Sensitivity Features:

Sensitivity	Feature(s)
High	Within 100m of a Grade IIIb Heritage site
Low	Low sensitivity
Very High	Within 100m of an Ungraded Heritage site

Figure 19: Archaeological and Cultural Heritage Combined Sensitivity

According to the DFFE Screening Report the proposed area falls mostly within very high and medium Palaeontology Theme Sensitivity. Please see map colour map under **Appendix 7**.

A PaleoMap extracted from the South African Heritage Resources Information System (SAHRIS) database and included in the Paleontological desktop study compiled by Elize Butler shows that the Palaeontological Sensitivity of the Ghaap Group is Very High while that of the Kalahari Group is Moderate (Almond and Pether, 2009; Almond *et al.*, 2013). The suggested location is classified as having a Very High Palaeontology Theme Sensitivity in the DEA Screening Report. Please refer to **Appendix 10** for the full specialist study.

#### MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

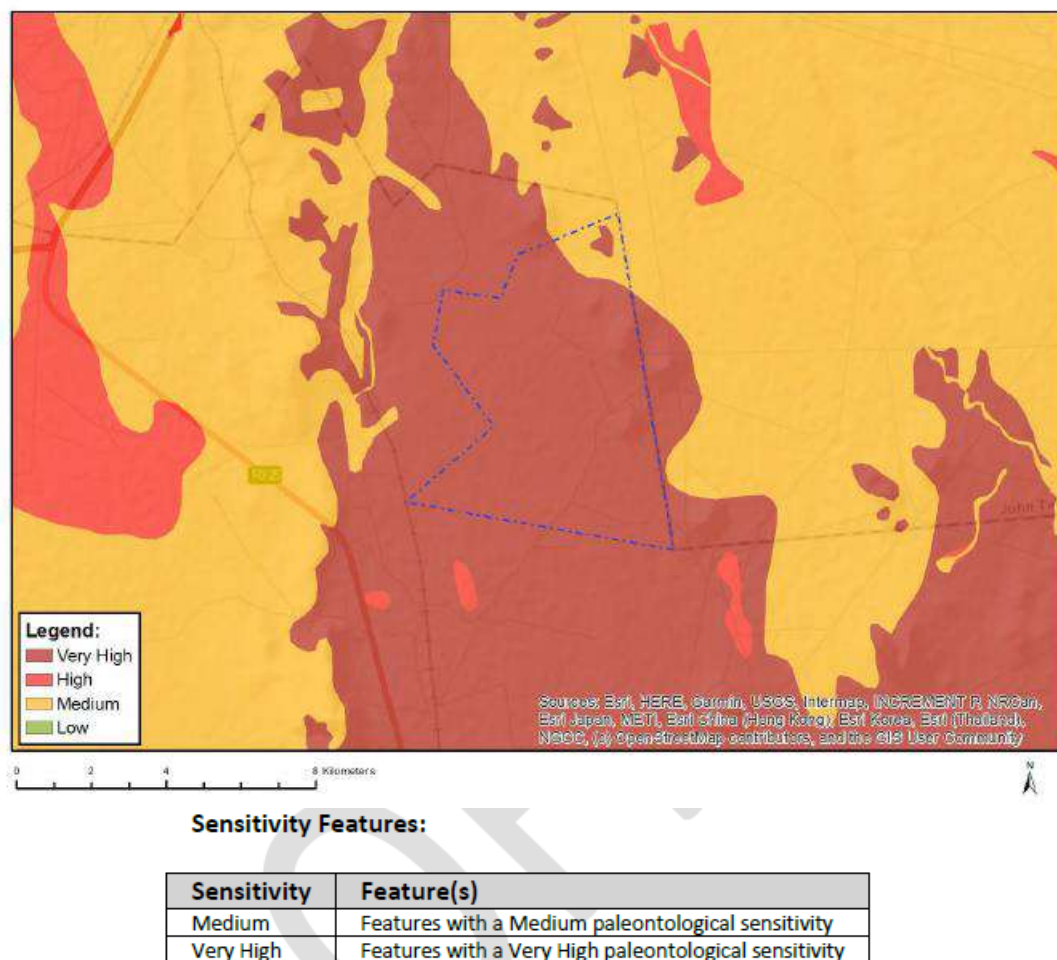


Figure 20: Relative Palaeontology Theme Sensitivity

Cultural Heritage in South Africa (includes all heritage resources) is protected by the **National Heritage Resources Act (Act 25 of 1999) (NHRA)**. According to Section 3 of the Act, all Heritage resources include “**all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens**”.

If such resources are found during the mining or development activities, they shall not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA must be contacted immediately, and work must stop.

If anything of Archaeological and/or paleontological significance is found during the construction and operational phase of the mine the following applies:

- NHRA 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- NHRA 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;
- NHRA 38(4)e – The following conditions apply with regards to the appointment of specialists: i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;

If fossil remains or trace fossils are discovered during any phase of construction, either on the surface or exposed by excavations the **Chance Find Protocol** must be implemented by the Environmental Control Officer (ECO) in charge of these developments. These discoveries ought to be protected and the ECO must report to SAHRA (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)) so that mitigation can be carry out by a paleontologist.

### **Chance Find Procedure**

- If a chance find is made the person responsible for the find must immediately stop working and all work that could impact that finding must cease in the immediate vicinity of the find.
- The person who made the find must immediately report the find to his/her direct supervisor which in turn must report the find to his/her manager and the ESO or site manager. The ESO or site manager must report the find to the relevant Heritage Agency (South African Heritage Research Agency, SAHRA). (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: [www.sahra.org.za](http://www.sahra.org.za)). The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS co-ordinates.
- A preliminary report must be submitted to the Heritage Agency within 24 hours of the find and must include the following: 1) date of the find; 2) a description of the discovery and a 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates.
- Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found.

Upon receipt of the preliminary report, the Heritage Agency will inform the ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary.

- The site must be secured to protect it from any further damage. No attempt should be made to remove material from their environment. The exposed finds must be stabilized and covered by a plastic sheet or sand bags. The Heritage agency will also be able to advise on the most suitable method of protection of the find.
- In the event that the fossil cannot be stabilized the fossil may be collected with extreme care by the ESO (site manager). Fossils finds must be stored in tissue paper and in an appropriate box while due care must be taken to remove all fossil material from the rescue site.
- Once Heritage Agency has issued the written authorization, the developer may continue with the development on the affected area.

**(b) Description of the current land uses.**

According to the land cover map below, the proposed area is largely natural land, no rivers were observed within the proposed project area. Depression was observed to exist within the project area. within the proposed project area. There are no communities and/or farmhouses located within the proposed project area. The nearest community is located approximately 7.16 km south of the project area, known as Lohatlha.

There are also several mines located within the 15km radius from the project area, these include but are not limited to; PGM Mining (Pty) Ltd which is located approximately 2.63km southwest of the project area as well as the King Mine Assmang that's located approximately 12.4km north of the project area and the Salene Mn Mine that's approximately 4.29km west of the proposed project area. The farms are also located approximately 16 km towards the south-east of the Sishen Iron Ore Mine and easily accessible via the Kathu-Postmasburg bitumen road. The E&R Kadgame Iron ore and Manganese Mine is located within the project area as confirmed on Figure 23 below. There is also an existing Prospecting right by the applicant on the applied property to prospect for Diamonds Kimberlite (DK), Gemstones except Diamonds (GS), Diamonds Alluvial (DA), Diamonds General (D), Diamonds (DIA) and Gold Ore (Au).

All infrastructure to be developed within the project area will be temporary and/or mobile.





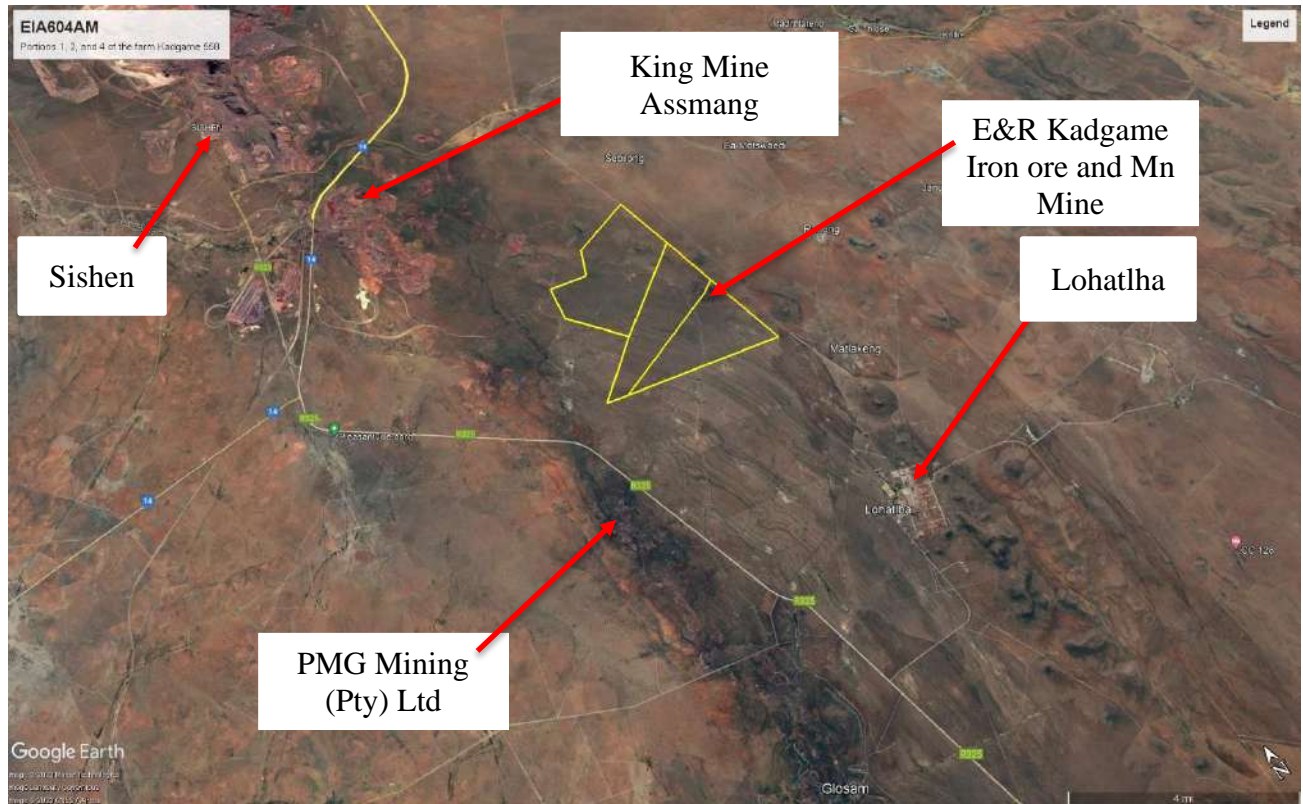


Figure 23: Google earth map

**v) The impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts—**

- (aa) can be reversed;
- (bb) may cause irreplaceable loss of resources; and
- (cc) can be avoided, managed or mitigated;

Please see heading J for the impacts identified and their assessment.

**vi) The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;**

**Method of environmental assessment**

The environmental assessment aims to identify the various possible environmental impacts that could results from the proposed development. Different impacts need to be evaluated in terms of its significance and in doing so highlight the most critical issues to be addressed.

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale



i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence. Significance is calculated as shown in the Table below.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

### **Impact Rating System**

Impact assessment must take account of the nature, scale and duration of impacts on the environment whether such impacts are positive or negative. Each impact is also assessed according to the following project phases:

- Construction
- Operation
- Decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance should also be included. The rating system is applied to the potential impacts on the receiving environment and includes an objective evaluation of the mitigation of the impact. In assessing the significance of each impact the following criteria is used:

**Table: The rating system**

<b>NATURE</b>		
Include a brief description of the impact of environmental parameter being assessed in the context of the project. This criterion includes a brief written statement of the environmental aspect being impacted upon by a particular action or activity.		
<b>GEOGRAPHICAL EXTENT</b>		
This is defined as the area over which the impact will be experienced.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
<b>PROBABILITY</b>		
This describes the chance of occurrence of an impact.		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).



4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
<b>DURATION</b>		
This describes the duration of the impacts. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the construction phase (0 – 1 years), or the impact will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 30 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered indefinite.
<b>INTENSITY/ MAGNITUDE</b>		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired. Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
<b>REVERSIBILITY</b>		
This describes the degree to which an impact can be successfully reversed upon completion of the proposed activity.		

1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
<b>IRREPLACEABLE LOSS OF RESOURCES</b>		
This describes the degree to which resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
<b>CUMULATIVE EFFECT</b>		
This describes the cumulative effect of the impacts. A cumulative impact is an effect which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible cumulative impact	The impact would result in negligible to no cumulative effects.
2	Low cumulative impact	The impact would result in insignificant cumulative effects.
3	Medium cumulative impact	The impact would result in minor cumulative effects.
4	High cumulative impact	The impact would result in significant cumulative effects
<b>SIGNIFICANCE</b>		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The calculation of the significance of an impact uses the following formula:  (Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.  The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact significance rating	Description

6 to 28	Negative low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative high impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive high impact	The anticipated impact will have significant positive effects.
74 to 96	Negative very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive very high impact	The anticipated impact will have highly significant positive effects.

**vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;**

<b>NEGATIVE IMPACTS</b>
Prospecting may have impact directly on any socio-economic aspects since this will be affect the farming activities, food security and have financial impact to the landowners using the farms for agricultural activities.
Increased ambient noise levels resulting from prospecting activities
Loss of Agricultural land
Increased traffic movement of trucks, moving ore bodies to the crushing area.
Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on environmental resources utilized by communities, landowners and other stakeholders.
Compromised Air Quality
Increased vehicle activity within the area resulting in the possible destruction and disturbance of fauna and flora.
Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
Longterm loss of high potential soil for agricultural land.
Airpollution due to dust to the surrounding community
<b>POSITIVE IMPACTS</b>
Temporary employment and other economic benefits

**viii) the possible mitigation measures that could be applied and level of residual 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).*

Adverse environmental associated with the prospecting activity have been identified through the Scoping & EIR process. Mitigation measures as set out in the Environmental Management Programme (EMPr) attached in Part B must be implemented in order to minimise any potential impacts.

All comments received during the review period of the Scoping and EIR report, as well as response provided is captured and recorded within the Comments and Response Report and will be attached in the final EIR.

**ix) If no alternative development [location] footprints for the activity were investigated, the motivation for not considering such; and**

As discussed in the previous section, based on outcomes of previous studies in the vicinity of the proposed site, the possibility to encounter high volumes of Diamonds Kimberlite (DK), Gemstones except for Diamonds (GS), Diamonds Alluvial (DA), Diamonds General (D), Diamonds (DIA), Gold Ore (Au) as well as the Aluminium ore (Al), Zinc ore (Zn), Silicon ore (Si) and Copper ore (Cu) on Portion 1 (Kadgame Number 3), Portion 2 (Noordpool) and Portion 4 (Bakenskop) of the farm Kadgame 558, Registration Division: District of Kuruman, Northern Cape, were identified (PWP, **Appendix 8**).

**x) A concluding statement indicating the location of the preferred alternative development [location] footprint within the approved site as contemplated in the accepted scoping report;**

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

The site is preferred due to its possibility of having high volumes of Diamonds Kimberlite (DK), Gemstones except for Diamonds (GS), Diamonds Alluvial (DA), Diamonds General (D), Diamonds (DIA), Gold Ore (Au) as well as the Aluminium ore (Al), Zinc ore (Zn), Silicon ore (Si) and Copper ore (Cu) deposits. The site is also preferred due to the existing prospecting right over the applied area; hence this application is an amendment to that existing right.

**I. A FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS THE ACTIVITY AND ASSOCIATED STRUCTURES AND INFRASTRUCTURE WILL IMPOSE ON THE PREFERRED [LOCATION] DEVELOPMENT FOOTPRINT ON THE APPROVED SITE**

*(As contemplated in the accepted scoping report through the life of the activity, including.)*

**i. A description of all environmental issues and risks that are identified during the environmental impact assessment process**

**Process for the identification of key issues**

The methodology for the identification of key issues aims, as far as possible, to provide a user-friendly analysis of information to allow for easy interpretation.

- **Checklist:** The checklist consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts.
- **Matrix:** The matrix analysis provides a holistic indication of the relationship and interaction between the various activities, development phases and the impact thereof on the environment. The method aims at providing a first order cause and effect relationship between the environment and the proposed activity. The matrix is designed to indicate the relationship between the different stressors and receptors which leads to specific impacts. The matrix also indicates the specialist studies, which will be submitted as part of the Environmental Impact Report in order to address the potentially most significant impacts.

**Checklist analysis**

The site visit was conducted to ensure a proper analysis of the site specific characteristics of the study area. The table below provides a checklist, which is designed to stimulate thought regarding possible consequences of specific actions and so assist scoping of key issues. It consists of a list of structured questions related to the environmental parameters and specific human actions. They assist in ordering thinking, data collection, presentation and alert against the omission of possible impacts. The table highlights certain issues, which are further analysed in matrix format.

**Table:** Environmental checklist

QUESTION	YES	NO	Un-sure	Description
<b>1. Are any of the following located on the site earmarked for the development?</b>				
I. A river, stream, dam or wetland		×		According to the Wetland areas map there are no wetlands within the project area. However, google earth showed that a depression exists within the project area. The screening report shows that the proposed project area has very high Aquatic Biodiversity Theme ( <b>Appendix 7</b> ).
II. A conservation or open		×		
III. An area that is of cultural importance	×			According to the DFFE Screening Report the proposed area falls mostly within low sensitivity with some areas of very high Archaeological and Cultural Heritage Theme Sensitivity. ( <b>Appendix 7</b> ).

IV. Site of geological significance	X			According to the DFFE Screening Report the proposed area falls mostly within very high Palaeontology Theme Sensitivity and to a lesser extent within medium sensitivity ( <b>Appendix 7</b> ).
V. Areas of outstanding natural beauty			X	
VI. Highly productive agricultural land		X		According to the Land Capability map the proposed area falls within land capability Classes 7, 8 and 5 ( <b>Appendix 5</b> ). The DFFE Screening Report shows the Agriculture Theme Sensitivity is mostly low with areas of medium sensitivity ( <b>Appendix 7</b> ).
VII. Floodplain		X		According to the river ecosystem map, the proposed project area has the perennial river running within 10km west of the project area.
VIII. Indigenous Forest			X	According to the land cover map the proposed area is mostly covered by natural land ( <b>Appendix 5</b> ).
IX. Grass land	X			According to the land cover map the proposed area is mostly covered by natural land ( <b>Appendix 5</b> ).
X. Bird nesting sites			X	
XI. Red data species			X	The proposed area is largely natural.
XII. Tourist resort		X		
<b>2. Will the project potentially result in potential?</b>				
I. Removal of people		X		None.
II. Visual Impacts	X			Visual impacts will be managed.
III. Noise pollution	X			The noise impact will be limited to working hours.
IV. Construction of an access road		X		Access will be obtained from existing gravel roads off the R325 and N14
V. Risk to human or valuable ecosystems due to explosion/fire/ discharge of waste into water or air.		X		None.
VI. Accumulation of large workforce (>50 manual workers) into the site.		X		Employment opportunities will be created during the construction and operational phase of the project.

VII. Utilisation of significant volumes of local raw materials such as water, wood etc.	×			Water will be used during the washing of the gravel and for dust suppression.
VIII. Job creation	×			Employment opportunities will be created during the construction and operational phase of the project.
IX. Traffic generation		×		None.
X. Soil erosion	×			Only areas earmarked for prospecting will be cleared. prospecting will be phased, and the topsoil stockpiled separately. Concurrent rehabilitation will take place.
XI. Installation of additional bulk telecommunication transmission lines or facilities		×		None.
<b>3. Is the proposed project located near the following?</b>				
I. A river, stream, dam or wetland		×		According to the Wetland areas map there are no wetlands within the project area. However, google earth showed that a depression exists within the project area. The screening report shows that the proposed project area has very high Aquatic Biodiversity Theme ( <b>Appendix 7</b> ).
II. A conservation or open space area		×		
III. An area that is of cultural importance			×	According to the DFFE Screening Report the area falls mostly within low sensitivity with some areas of very high Archaeological and Cultural Heritage Theme Sensitivity. ( <b>Appendix 7</b> ).
IV. A site of geological significance			×	According to the DFFE Screening Report the area falls mostly within the low sensitivity and a part of Very High Paleontology Theme Sensitivity ( <b>Appendix 7</b> ).
V. An area of outstanding natural beauty		×		
VI. Highly productive agricultural land	×			According to the Land Capability map the surrounding area falls within land capability Classes 7, 8 and 5 ( <b>Appendix 5</b> ).
VII. A tourist resort			×	
VIII. A formal or informal settlement		×		

### Matrix analysis

The matrix describes the relevant listed activities, the aspects of the development that will apply to the specific listed activity, a description of the environmental issues and potential impacts, the significance and magnitude of the potential impacts, and the mitigation of the potential impacts. The matrix also highlights areas of particular concern, which requires more in-depth assessment. Each cell is evaluated individually in terms of the nature of the impact, duration and its significance – should no mitigation measures be applied. This is important since many impacts would not be considered insignificant if proper mitigation measures were implemented. The matrix also provides an indication if mitigation measures are available.

In order to conceptualise the different impacts, the matrix specify the following:

- **Stressor:** Indicates the aspect of the proposed activity, which initiates and cause impacts on elements of the environment.
- **Receptor:** Highlights the recipient and most important components of the environment affected by the stressor.
- **Impacts:** Indicates the net result of the cause-effect between the stressor and receptor.
- **Mitigation:** Impacts need to be mitigated to minimise the effect on the environment.



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;

LISTED ACTIVITY (The Stressor)	ASPECTS OF THE DEVELOPMENT /ACTIVITY	POTENTIAL IMPACTS			SIGNIFICANCE AND MAGNITUDE OF POTENTIAL IMPACTS			MITIGATION OF POTENTIAL IMPACTS	SPECIALIST STUDIES / INFORMATION
		Receptors	Impact description	Minor	Major	Durati on	Possible Mitigation		
CONSTRUCTION PHASE									
<p><b>Listing Notice 1, (GNR 327), Activity 19:</b> <i>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</i></p> <p><b>Listing Notice 1, (GNR 327), Activity 24:</b> <i>The development of a road— (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</i></p> <p><b>Listing Notice 1 (GNR 983), Activity 20:</b> <i>“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 associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).”</i></p> <p><b>Listing Notice 2, (GNR 984), Activity 15:</b> <i>"The clearance of an area of 20 hectares or more, of indigenous vegetation”</i></p> <p><b>Listing Notice 2, (GNR 984), Activity 19:</b> <i>“The removal and disposal of minerals contemplated in terms of section 20 of the</i></p>	<p><u>Site clearing and preparation.</u> Areas earmarked for prospecting will need to be cleared, topsoil will be stockpiled separately.</p>	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"><li>Loss or fragmentation of indigenous natural vegetation.</li><li>Loss of sensitive species.</li><li>Loss or fragmentation of habitats.</li></ul>		-	S	Yes	-
			Air	<ul style="list-style-type: none"><li>Air pollution due to the increase of traffic.</li><li>Dust from mining/prospecting activities</li></ul>	-		M	Yes	-
			Soil	<ul style="list-style-type: none"><li>Soil degradation, including erosion.</li><li>Loss of topsoil.</li><li>Disturbance of soils and existing land use (soil compaction).</li></ul>	-	-	S	Yes	-
			Geology	<ul style="list-style-type: none"><li>It is not foreseen that the removal of indigenous vegetation will impact on the geology or vice versa.</li></ul>	-		S	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"><li>Generation of waste that need to be accommodated at a licensed landfill site.</li><li>Generation of sewage that need to be accommodated by the local sewage plant.</li></ul>	-		S	Yes	-
			Ground water	<ul style="list-style-type: none"><li>Pollution due to construction vehicles.</li></ul>	-		S	Yes	-
			Surface water	<ul style="list-style-type: none"><li>Increase in storm water run-off.</li><li>Pollution of water sources due to soil erosion.</li><li>Destruction of watercourses (pans/dams/streams/wetlands).</li></ul>		-	S	Yes	-
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"><li>Job creation.</li><li>Business opportunities.</li><li>Skills development.</li></ul>		+	S	Yes	-
			Visual landscape	<ul style="list-style-type: none"><li>Potential visual impact on residents of farmsteads and motorists in close proximity to proposed facility.</li></ul>	-		L	Yes	-
			Traffic volumes	<ul style="list-style-type: none"><li>Increase in construction vehicles.</li></ul>	-		S	Yes	-
			Health & Safety	<ul style="list-style-type: none"><li>Air/dust pollution.</li><li>Road safety.</li><li>Increased risk of veld fires.</li></ul>		-	S	Yes	-
			Noise levels	<ul style="list-style-type: none"><li>The generation of noise as a result of construction vehicles, the use of machinery such as drills, excavators, dumper trucks and people working on the site.</li></ul>	-		L	Yes	-

<p><i>Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)."</i></p>			Tourism industry	<ul style="list-style-type: none"> <li>Since there are no tourism facilities in close proximity to the site, the construction activities will not have an impact on tourism in the area.</li> </ul>	-		M	Yes	-
			Heritage resources	<ul style="list-style-type: none"> <li>Removal or destruction of archaeological and/or paleontological sites.</li> <li>Removal or destruction of buildings, structures, places and equipment of cultural significance.</li> <li>Removal or destruction of graves, cemeteries and burial grounds.</li> </ul>		-	L	Yes	-
<b>OPERATIONAL PHASE</b>									
<p><b>Listing Notice 2 (GNR 984), Activity 21:</b>  <i>"Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies."</i></p> <p><b>Listing Notice 3 (GNR 324), Activity 4:</b>  <i>The development of a road wider than 4 metres with a reserve less than 13,5 metres. (g) Northern Cape (ii) Outside urban areas; (ee) Critical Biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority</i></p> <p><b>Listing Notice 3 (GNR 324), Activity 10:</b>  <i>The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. (g) Northern Cape (iii) Outside urban areas: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</i></p> <p><b>Listing Notice 3 (GNR 324), Activity 12:</b>  <i>"The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous</i></p>	<p>The key components of the proposed project are described below:</p> <ul style="list-style-type: none"> <li><b>Supporting Infrastructure</b> - A control facility with basic services such as water and electricity will be constructed on the site and will have an approximate footprint 50m<sup>2</sup> or less. Other supporting infrastructure includes a site office and workshop area.</li> <li><b>Roads</b> – Access will be obtained from existing gravel roads off the R357.</li> <li><b>Fencing</b> - For health, safety and security reasons, the facility will be required to be fenced off from the surrounding farm.</li> </ul>	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"> <li>Fragmentation of habitats.</li> <li>Establishment and spread of declared weeds and alien invader plants (operations).</li> </ul>		-	L	Yes	-
			Air quality	<ul style="list-style-type: none"> <li>Air pollution due to the mining / prospecting activity and transport of the gravel to the designated areas.</li> </ul>	-		S	Yes	-
			Soil	<ul style="list-style-type: none"> <li>Soil degradation, including erosion.</li> <li>Disturbance of soils and existing land use (soil compaction).</li> <li>Loss of agricultural potential (medium - high significance relative to agricultural potential of the site).</li> </ul>	-		L	Yes	-
			Geology	<ul style="list-style-type: none"> <li>Collapsible soil.</li> <li>Seepage (shallow water table).</li> <li>Active soil (high soil heave).</li> <li>Erodible soil.</li> <li>The presence of undermined ground.</li> <li>Instability due to soluble rock.</li> <li>Steep slopes or areas of unstable natural slopes.</li> <li>Areas subject to seismic activity.</li> <li>Areas subject to flooding.</li> </ul>	-		L	Yes	-
			Existing services infrastructure	<ul style="list-style-type: none"> <li>Generation of waste that need to be accommodated at a licensed landfill site.</li> <li>Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant.</li> <li>Increased consumption of water, dust suppression.</li> </ul>	-		L	Yes	-
			Ground water	<ul style="list-style-type: none"> <li>Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.</li> </ul>	-		L	Yes	-
			Surface water	<ul style="list-style-type: none"> <li>Increase in storm water runoff. The development will potentially result in an increase in storm water run-off that needs to be managed to prevent soil erosion.</li> </ul>		-	L	Yes	-

vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. <b>(g)</b> Northern Cape <b>(ii)</b> Critical Biodiversity Areas as identified in biodiversity plans “.				<ul style="list-style-type: none"><li>• Destruction of watercourses (pans/dams/streams/wetlands).</li><li>• Leakage of hazardous materials. The machinery on site require oils and fuel to function. Leakage of these oils and fuels can contaminate water supplies.</li></ul>					
		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"><li>• Job creation. Security guards will be required for 24 hours every day of the week.</li><li>• Skills development.</li></ul>		+	L	Yes	-
			Visual landscape	<ul style="list-style-type: none"><li>• The proposed portions are used for livestock grazing and cultivation which will still take place simultaneously with the prospecting activity, however this depends on the location of the activity.</li></ul>	-		L	Yes	-
			Traffic volumes	<ul style="list-style-type: none"><li>• Increase in vehicles collecting gravel for distribution.</li></ul>	-		S	Yes	-
			Health & Safety	<ul style="list-style-type: none"><li>• Air/dust pollution.</li><li>• Road safety.</li></ul>	-		S	Yes	-
			Noise levels	<ul style="list-style-type: none"><li>• The proposed development will result in noise pollution during the operational phase.</li></ul>	-		M	Yes	-
			Tourism industry	<ul style="list-style-type: none"><li>• Since there are no tourism facilities in close proximity to the site, the decommissioning activities may have an impact on tourism in the area.</li></ul>	-		M	Yes	-
			Heritage resources	<ul style="list-style-type: none"><li>• It is not foreseen that the proposed activity will impact on heritage resources or vice versa.</li></ul>	N/A	N/A	N/A	N/A	-
DECOMMISSIONING PHASE									
-	<u>Mine closure</u> During the mine closure the Mine and its associated infrastructure will be dismantled.  <u>Rehabilitation of biophysical environment</u> The biophysical environment will be rehabilitated.	BIOPHYSICAL ENVIRONMENT	Fauna & Flora	<ul style="list-style-type: none"><li>• Re-vegetation of exposed soil surfaces to ensure no erosion in these areas.</li></ul>		+	L	Yes	-
	Air quality		<ul style="list-style-type: none"><li>• Air pollution due to the increase of traffic of construction vehicles.</li></ul>	-		S	Yes	-	
	Soil		<ul style="list-style-type: none"><li>• Backfilling of all voids</li><li>• Placing of topsoil on backfill</li></ul>		+	L	Yes	-	
	Geology		<ul style="list-style-type: none"><li>• It is not foreseen that the decommissioning phase will impact on the geology of the site or vice versa.</li></ul>	N/A	N/A	N/A	N/A	-	
	Existing services infrastructure		<ul style="list-style-type: none"><li>• Generation of waste that need to be accommodated at the local landfill site.</li><li>• Generation of sewage that need to be accommodated by the municipal sewerage system and the local sewage plant.</li><li>• Increase in construction vehicles.</li></ul>	-		S	Yes	-	
	Ground water		<ul style="list-style-type: none"><li>• Pollution due to construction vehicles.</li></ul>	-		S	Yes	-	
	Surface water		<ul style="list-style-type: none"><li>• Increase in storm water run-off.</li><li>• Pollution of water sources due to soil erosion.</li><li>• Destruction of watercourses (pans/dams/streams/wetlands).</li></ul>	-		S	Yes	-	

		SOCIAL/ECONOMIC ENVIRONMENT	Local unemployment rate	<ul style="list-style-type: none"> <li>Loss of employment.</li> </ul>	-		L	Yes	-
			Visual landscape	<ul style="list-style-type: none"> <li>Potential visual impact on visual receptors in close proximity to proposed facility.</li> </ul>	-		S	Yes	-
			Traffic volumes	<ul style="list-style-type: none"> <li>Increase in construction vehicles.</li> </ul>	-		S	Yes	-
			Health & Safety	<ul style="list-style-type: none"> <li>Air/dust pollution.</li> <li>Road safety.</li> <li>Increased crime levels. The presence of mine workers on the site may increase security risks associated with an increase in crime levels as a result of influx of people in the rural area.</li> </ul>	-		L	Yes	-
			Noise levels	<ul style="list-style-type: none"> <li>The generation of noise as a result of construction vehicles, the use of machinery and people working on the site.</li> </ul>	-		S	Yes	-
			Tourism industry	<ul style="list-style-type: none"> <li>Since there are no tourism facilities in close proximity to the site, the decommissioning activities will not have an impact on tourism in the area.</li> </ul>	+		S	Yes	-
			Heritage resources	<ul style="list-style-type: none"> <li>It is not foreseen that the decommissioning phase will impact on any heritage resources.</li> </ul>	N/A	N/A	N/A	N/A	-

(N/A) No impact (+) Positive Impact (-) Negative Impact (S) Short Term (M) Medium Term (L) Long Term

## J. AN ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK, INCLUDING—

- (i) cumulative impacts;
- (ii) the nature, significance and consequences of the impact and risk;
- (iii) the extent and duration of the impact and risk;
- (iv) the probability of the impact and risk occurring;
- (v) the degree to which the impact and risk can be reversed;
- (vi) the degree to which the impact and risk may cause irreplaceable loss of resources;  
and
- (vii) the degree to which the impact and risk can be mitigated;

### **Significance of potential impacts**

The following sections present the outcome of the significance rating exercise. The results suggest that almost none of the key issues identified as part of the EIR process had a negative high environmental significance. Instead, the overall score indicates a low environmental significance score.

### INITIAL CLEARANCE AND SITE PREPARATION PHASE

**Direct impacts:** During this phase minor negative impacts are foreseen over the short term. The latter refers to a period of weeks. The site preparation may result in the loss or fragmentation of indigenous natural fauna and flora, loss or fragmentation of habitats, soil erosion, hydrology, and temporary noise disturbance, generation of waste, visual intrusions, increase in heavy vehicle traffic, and risk to safety, livestock and farm infrastructure, and increased risk of veld fires. The abovementioned impacts are discussed in more detail below:

- **Loss, destruction or fragmentation of indigenous natural fauna and flora:**

The proposed prospecting right area is dominated by the Kuruman Thornveld as well as the Kuruman Mountain Bushveld. Both the above-mentioned vegetation types are part of the Eastern Kalahari Bushveld which is a sub-bioregion for the Savanna Biome.

<b>Loss or fragmentation of indigenous natural fauna and flora</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Probable (3)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	High (3)	Medium (2)
Reversibility	Barely reversible (3)	Partly reversible (2)
Irreplaceable loss of resources	Significant loss of resource (3)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative impacts (3)	
<b>Significance</b>	<b>Negative medium (45)</b>	<b>Negative low (24)</b>
Can impacts be mitigated?	If the development is approved, contractors must ensure that no mammalian species are disturbed, trapped, hunted or killed. If the development is approved, every effort should be made to confine the	

	<p>footprint to the blocks allocated for the development and have the least possible edge effects on the surrounding area. The EMPr also provides numerous mitigation measures – refer to section (f) of the EMPr.</p> <p>The potential impacts associated with damage to and loss of farmland should be effectively mitigated. The aspects that should be covered include:</p> <ul style="list-style-type: none"> <li>• The site should be fenced off prior to commencement of construction activities;</li> <li>• The footprint associated with the construction related activities (access roads, construction platforms, workshop etc.) should be confined to the fenced off area and minimised where possible;</li> <li>• An Environmental Control Officer (ECO) should be appointed to monitor the establishment phase of the construction phase;</li> <li>• All areas disturbed by construction related activities, such as access roads on the site, construction platforms, workshop area etc., should be rehabilitated at the end of the construction phase;</li> <li>• The implementation of a rehabilitation programme should be included in the terms of reference for the contractor/s appointed. Specifications for the rehabilitation are provided throughout the EMPr – section (f) of the EMPr.</li> <li>• The implementation of the Rehabilitation Programme should be monitored by the ECO.</li> <li>• Supervision by an ecologist to ensure success of the rescue operation</li> <li>• Place drilling holes away from any red listed and/or protected plant species</li> <li>• Use already available farm roads to avoid trampling red listed plant species</li> <li>• Due to the sensitivity of the areas it is advised that areas designated for vegetation clearing should be identified and visibly marked off and also approved as part of final drilling map</li> <li>• Vegetation clearing areas should be kept to a minimum and restricted to the proposed drilling sites.</li> <li>• Exposed areas should be rehabilitated with indigenous plants to the project area as soon as construction is finished.</li> <li>• Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal</li> <li>• A low speed limit should be enforced on site to reduce wild animal-vehicle collisions</li> <li>• No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.</li> <li>• Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species.</li> <li>• Hunting weapons are prohibited on site.</li> <li>• Contract employees must be educated about the value of wild animals and the importance of their conservation.</li> <li>• The ECO must conduct regular site inspections of removing any snares or traps that have been erected.</li> <li>• Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage.</li> <li>• Ensure that the colours used to paint the buildings including the roof are blending to the environment</li> </ul>
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- Loss destruction or fragmentation of habitats – It is noted that the proposed project site is mostly covered in natural vegetation. Faunal species will primarily be affected by the overall loss of habitat. However, it is expected to be low to medium since there are current mining activities occurring within the site which have disturbed the area.

<b>Loss or fragmentation of habitats</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)
Duration	Long term (3)	Medium term (2)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Medium cumulative impacts (3)	
<b>Significance</b>	<b>Negative medium (39)</b>	<b>Negative low (22)</b>
Can impacts be mitigated?	Exotic and invasive plant species should not be allowed to establish, if the development is approved. Where exotic and invasive plant species are found at the site continuous eradication should take place. If the development is approved, every effort should be made to confine the footprint to the blocks allocated for development – section (f) of the EMPr also provides	

	<p>numerous mitigation measures related to fauna and flora.</p> <ul style="list-style-type: none"> <li>Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees.</li> <li>Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal.</li> <li>A low speed limit should be enforced on site to reduce wild animal-vehicle collisions</li> <li>No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.</li> <li>Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species.</li> <li>Hunting weapons are prohibited on site.</li> <li>Contract employees must be educated about the value of wild animals and the importance of their conservation.</li> <li>The ECO must conduct regular site inspections of removing any snares or traps that have been erected.</li> <li>Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage.</li> <li>Ensure that the colours used to paint the buildings including the roof are blending to the environment</li> </ul>
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- Loss of topsoil –Topsoil may be lost due to poor topsoil management (burial, erosion, etc.). The effect will be the loss of soil fertility on disturbed areas after rehabilitation. This will result in potential grazing and cultivation being lost.

<b>Loss of topsoil</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Long term (3)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Significant loss of resource (3)	No loss of resource (1)
Cumulative impact	Medium cumulative impacts (3)	
<b>Significance</b>	<b>Negative medium (45)</b>	<b>Negative low (16)</b>
Can impacts be mitigated?	The following mitigation or management measures are provided:	

	<ul style="list-style-type: none"> <li>• If an activity will mechanically disturb below surface in any way, then any available topsoil should first be stripped from the entire surface and stockpiled for re-spreading during rehabilitation.</li> <li>• Topsoil stockpiles must be conserved against losses through erosion by establishing vegetation cover on them.</li> <li>• Dispose of all subsurface spoils from excavations where they will not impact on undisturbed land.</li> <li>• During rehabilitation, the stockpiled topsoil must be evenly spread over the entire disturbed surface.</li> <li>• Erosion must be controlled where necessary on top soiled areas.</li> </ul> <p>Establish an effective record keeping system for each area where soil is disturbed for constructional purposes. These records should be included in environmental performance reports and should include all the records below.</p> <ul style="list-style-type: none"> <li>• Record the GPS coordinates of each area.</li> <li>• Record the date of topsoil stripping.</li> <li>• Record the GPS coordinates of where the topsoil is stockpiled.</li> <li>• Record the date of cessation of constructional (or operational) activities at the particular site.</li> <li>• Photograph the area on cessation of constructional activities.</li> <li>• Record date and depth of re-spreading of topsoil.</li> <li>• Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time.</li> </ul> <p>Section (f) of the EMPr also provide mitigation measures related to topsoil management.</p>
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- Soil erosion – Soil erosion due to alteration of the land surface run-off characteristics. Alteration of run-off characteristics may be caused by construction related land surface disturbance, vegetation removal and the establishment of roads. Erosion will cause loss and deterioration of soil resources. This will result in grazing and cultivation potential being lost.

<b>Soil erosion</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Geographical extent	Site (1)	Site (1)
Probability	Possible (2)	Possible (2)

Duration	Long term (2)	Short term (1)
Magnitude	High (3)	Medium (2)
Reversibility	Barely reversible (3)	Partly reversible (2)
Irreplaceable loss of resources	Marginal (2)	Marginal (2)
Cumulative impact	Medium cumulative impact (2).	
<b>Significance</b>	<b>Negative Medium (36)</b>	<b>Negative low (20)</b>
Can impacts be mitigated?	<ul style="list-style-type: none"> <li>The following mitigation or management measures are provided: Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.</li> <li>Monitor the area regularly after larger rainfall events to determine where erosion may be initiated and then mitigate by modifying the soil micro-topography and revegetation or soil erosion control efforts accordingly.</li> </ul> <p>Include periodical site inspection in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the occurrence any erosion on site or downstream – refer to section (f) of the EMPr.</p>	

- Temporary noise disturbance - Preparation activities will result in the generation of noise over a period of months. Sources of noise are likely to include vehicles, the use of machinery such as back actors and people working on the site. The noise impact is unlikely to be significant; but activities should be limited to normal working days and hours (06:00 – 18:00).

<b>Temporary noise disturbance</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Possible (2)
Duration	Medium term (1)	Medium term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Low cumulative impact (2).	
<b>Significance</b>	<b>Negative low (20)</b>	<b>Negative low (9)</b>
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMPr.	

- Generation of waste - general waste, construction waste, sewage and grey water - The workers on site are likely to generate general waste such as food wastes, packaging, bottles, etc. The applicant will need to ensure that general waste is appropriately disposed of i.e. taken to the nearest licensed landfill. Sufficient ablution facilities will have to be provided, in the form of

portable/VIP toilets. Due to the location of the project area, as it located approximately 20km away from any nearby town and it is surrounded by other mine areas. It is foreseen that the portable toilet services might not be reached regularly, therefore it is advised that French drains system be investigated for the proposed activity.

<b>Generation of waste</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local/district (2)	Local/district (2)
Probability	Probable (3)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Low cumulative impact (2) - An additional demand for landfill space could result in significant cumulative impacts if services become unstable or unavailable, which in turn would negatively impact on the local community. If general waste is left on site livestock could mistakenly eat it, which might in turn harm or kill them.	
<b>Significance</b>	<b>Negative low (12)</b>	<b>Negative low (11)</b>
Can impacts be mitigated?	Yes, it is therefore important that all management actions and mitigation measures included in section (f) of the EMPr are implemented.	

Impacts on heritage objects - According to the DFFE Screening Report the proposed area falls mostly within low Archaeological and Cultural Heritage Theme Sensitivity and a certain area within very high sensitivity. The screening report also shows that the proposed project area falls mostly within very high and medium Palaeontology Theme Sensitivity. Please see map colour map under **Appendix 7**. Only one farmhouse found on site showed to be of cultural heritage importance, however, because the house has been altered, it resulted to be of low heritage value and has been significantly recorded.

<b>Impacts on heritage objects</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Possible (2)
Duration	Permanent (4)	Permanent (4)
Magnitude	High (3)	Low (1)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Complete loss of resources (4)	No loss of resource (1)
Cumulative impact	The impact would result in low cumulative impact (2). Loss of information regarding early settlement in the region.	
<b>Significance</b>	<b>Positive high (54)</b>	<b>Negative low (15)</b>

Can impacts be mitigated?	If archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made. Also refer to section (f) of the EMPr.
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**Indirect impacts:** The nuisance aspects generally associated with the installation of infrastructure or ground preparation will also be applicable to this development, which relates primarily to the increase in vehicle traffic associated with mining practices, the influx of job seekers to the area, risk to safety, livestock and farm infrastructure, and increased risk of veld fires.

- Increase in vehicle traffic – The movement of heavy vehicles during the clearance of vegetation and topsoil has the potential to damage local farm roads and create dust and safety impacts for other road users in the area. Access will be obtained from gravel roads extending from the R325 and N14 respectively. While the volume of traffic along this road is low, the movement of heavy vehicles is likely to damage the road surface and impact on other road users.

It should be noted that in South Africa the responsibility of maintaining formal gravel roads has generally fallen on public authorities. Maintenance of these formal roads has been carried out either directly by these Provincial Departments or contracted out to private enterprise. The applicant's responsibility will be to maintain his own farm road on his property.

Any internal gravel farm roads which are jointly used with other users will need to be maintained by all parties involved.

Increase in vehicle traffic	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Low cumulative impact (2). If damage to roads is not repaired, then this will affect the farming activities in the area and result in higher maintenance costs for vehicles of local farmers and other road users. The costs will be borne by road users who were not responsible for the damage.	
<b>Significance</b>	<b>Negative Low (10)</b>	<b>Negative low (9)</b>
Can impacts be mitigated?	<p>The potential impacts associated with heavy vehicles can be effectively mitigated. The mitigation measures include:</p> <ul style="list-style-type: none"> <li>• The contractor must ensure that damage caused by construction on the off-gravel roads. The costs</li> </ul>	



	<p>associated with the repair must be borne by the contractor;</p> <ul style="list-style-type: none"> <li>Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport sand and building materials are fitted with tarpaulins or covers;</li> <li>All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.</li> </ul> <p>Also refer section (f) of the EMPr. For mitigation measures related to traffic.</p>
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- Risk to safety, livestock and farm infrastructure - The presence on and movement of workers on and off the site poses a potential safety threat to local farmer's, farm workers and the communities in the vicinity of the site. In addition, farm infrastructure, such as fences and gates, may be damaged and stock losses may also result from gates being left open and/or fences being damaged, or stock theft linked either directly or indirectly to the presence of farm workers on the site.

<b>Risk to safety, livestock and farm infrastructure</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	No loss of resource (1)
Cumulative impact	Low cumulative effects (2), provided losses are compensated for.	
<b>Significance</b>	<b>Negative low (22)</b>	<b>Negative low (8)</b>
Can impacts be mitigated?	<p>Key mitigation measures include:</p> <ul style="list-style-type: none"> <li><b>Elite International Logistics (Pty) Ltd</b> should enter into an agreement with the local farmers in the area whereby damages to farm property etc. during the construction phase will be compensated for. The agreement should be signed before the construction phase commences;</li> <li>The construction area should be fenced off prior to the commencement of the construction phase. The movement of construction workers on the site should be confined to the fenced off area;</li> <li>Contractors appointed by <b>Elite International Logistics (Pty) Ltd</b> should provide daily transport for low and semi-skilled workers to and</li> </ul>	

	<p>from the site. This would reduce the potential risk of trespassing on the remainder of the farm and adjacent properties;</p> <ul style="list-style-type: none"> <li>• <b>Elite International Logistics (Pty) Ltd</b> should hold contractors liable for compensating farmers in full for any stock losses and/or damage to farm infrastructure that can be linked to construction workers. This should be contained in the Code of Conduct to be signed between the proponent, the contractors and neighbouring landowners. The agreement should also cover losses and costs associated with fires caused by construction workers or construction related activities (see below);</li> <li>• The Environmental Management Programme (EMPr) should outline procedures for managing and storing waste on site, specifically plastic waste that poses a threat to livestock if ingested;</li> <li>• Contractors appointed <b>Elite International Logistics (Pty) Ltd</b> must ensure that all workers are informed at the outset of the construction phase of the conditions contained on the Code of Conduct, specifically consequences of stock theft and trespassing on adjacent farms.</li> <li>• Contractors appointed by <b>Elite International Logistics (Pty) Ltd</b> must ensure that construction workers who are found guilty of trespassing, stealing livestock and/or damaging farm infrastructure are dismissed and charged. This should be contained in the Code of Conduct. All dismissals must be in accordance with South African labour legislation;</li> <li>• The housing of construction workers on the site should be strictly limited to security personnel (if any).</li> </ul>
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- Increased risk of veld fires - The presence of construction workers and construction-related activities on the site poses an increased risk of grass fires that could in turn pose a threat to livestock, crops, wildlife, farmsteads and the communities in the area. In the process, infrastructure may also be damaged or destroyed and human lives threatened. The potential risk of grass fires was heightened by the windy conditions in the area, especially during the dry, windy winter months from May to October. Fire-fighting equipment should be provided on site during the construction phase.

Increased risk of veld fires	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Region (3)	Local (2)
Probability	Probable (3)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Very high (4)	Medium (2)

Reversibility	Irreversible (4)	Partly reversible (2)
Irreplaceable loss of resources	Significant loss of resource (3)	Marginal loss of resource (2)
Cumulative impact	Negligible cumulative effects (1), provided losses are compensated for.	
Significance	Negative high (64)	Negative low (22)
Can impacts be mitigated?	<p>The mitigation measures include:</p> <ul style="list-style-type: none"> <li>• A fire-break should be constructed around the perimeter of the site prior to the commencement of the construction phase;</li> <li>• Contractor should ensure that open fires on the site for cooking or heating are not allowed except in designated areas;</li> <li>• Contractor to ensure that construction related activities that pose a potential fire risk, such as welding, are properly managed and are confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high risk dry, windy winter months;</li> <li>• Contractor to provide adequate firefighting equipment on-site, including a fire fighting vehicle;</li> <li>• Contractor to provide fire-fighting training to selected construction staff;</li> <li>• No construction staff, with the exception of security staff, to be accommodated on site over night;</li> <li>• As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the firefighting costs borne by farmers and local authorities.</li> </ul>	

## OPERATIONAL PHASE

**Direct impacts:** During the operational phase the study area will serve as a Prospecting area and the impacts are generally associated with soil erosion, change in land use, impacts associated with the, increase in storm water runoff, increased consumption of water, visual intrusion, the generation of general waste, leakage of hazardous materials, and the change in the sense of place. The operational phase will also have a direct positive impact through the provision of permanent employment opportunities and facilitating a positive economic growth. The abovementioned impacts are discussed in more detail below:

- Soil erosion – There is a low to no risk factor for soil erosion for drilling and pitting. The conditions of the EMP will be adhered to throughout the prospecting operation and

commitment to rehabilitation is of paramount importance in order to obtain a closure certificate from the DMRE.

<b>Soil erosion</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	No loss of resource (1)
Cumulative impact	Low cumulative effects (2), should these impacts occur, there will be a cumulative impact on the air and water resources in the study area in terms of pollution.	
<b>Significance</b>	<b>Negative Low (24)</b>	<b>Negative Low (8)</b>
Can impacts be mitigated?	<p>Yes, to avoid soil erosion it will be a good practice to not remove all the vegetation at once but to only clear the area as it becomes necessary and to implement concurrent rehabilitation.</p> <ul style="list-style-type: none"> <li>The following mitigation or management measures are provided: Implement an effective system of run-off control, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.</li> <li>Monitor the area regularly after larger rainfall events to determine where erosion may be initiated and then mitigate by modifying the soil micro-topography and revegetation or soil erosion control efforts accordingly.</li> </ul> <p>Also refer to section (f) of the EMPr.</p>	

- Change in land-use – The proposed area will remain as a prospecting area. However, the use of the remaining natural areas will result in a change of land-use from natural to prospecting.

<b>Change in land use</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	Marginal loss of resource (2)	Marginal loss of resource (2)
Cumulative impact	Low cumulative effects (2)	
<b>Significance</b>	<b>Negative low (11)</b>	<b>Negative low (11)</b>

Can impacts be mitigated?	<p>The proponent should establish a Rehabilitation Fund to be used to rehabilitate the area once the proposed facility has been decommissioned. The fund should be funded by revenue generated during the operational phase of the project. The motivation for the establishment of a Rehabilitation Fund is based on the experience in the mining sector where many mines on closure have not set aside sufficient funds for closure and decommissioning.</p> <p>Also refer to section (f) of the EMP.</p>
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- Generation of alternative land use income – Income generated through the potential prospecting of the minerals applied for will provide the farming enterprise with increased cash flow and rural livelihood, and thereby improve the financial sustainability of farming on site.

<b>Generation of alternative land use income</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Positive	Positive
Geographical extent	Site (1)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	Medium (2)	Medium (2)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resources (1)	No loss of resources (1)
Cumulative impact	Low cumulative impact (2).	
<b>Significance</b>	<b>Positive Low (24)</b>	<b>Positive Low (26)</b>
Can impacts be mitigated?	No mitigation required.	

- Increase in storm water runoff – The development will unlikely result in an increase in storm water run-off that needs to be managed to prevent soil erosion, since no vegetation will be cleared.

<b>Increase in storm water runoff</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	Marginal loss of resource (2)	No loss of resource (1)
Cumulative impact	Low cumulative impact (2) - Should these impacts occur, there will be cumulative impacts on the wider area.	
<b>Significance</b>	<b>Negative low (22)</b>	<b>Negative low (9)</b>
Can impacts be mitigated?	Yes. It is therefore important that all management actions and mitigation measures included in section	

	(f) of the EMP. are implemented to ensure that these impacts do not occur
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- Increased consumption of water – Additional water requirements related to the portable water supply for employees and workers. Water will also be used for dust suppression.

<b>Increased consumption of water</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)
Duration	Medium term (2)	Medium term (2)
Magnitude	Medium (2)	Medium (2)
Reversibility	Irreversible (4)	Irreversible (4)
Irreplaceable loss of resources	Marginal loss of resources (2)	Marginal loss of resources (2)
Cumulative impact	Medium cumulative impacts (3) - An additional demand on water sources could result in a significant cumulative impact with regards to the availability of water.	
<b>Significance</b>	<b>Negative medium (32)</b>	<b>Negative medium (32)</b>
Can impacts be mitigated?	Yes, management actions and mitigation measures related to the use of water are included in section (f) of the EMP.	

- Generation of waste –Workers will be present on site from 06:00 – 18:00, Monday to Saturday. Sources of general waste will be waste food, packaging, paper, etc. General waste will be stored on the site and removed on a weekly basis.

<b>Generation of waste</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Definite (4)	Definite (4)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Medium cumulative impact (3) - An additional demand for landfill space could result in significant cumulative impacts with regards to the availability of landfill space. If general waste is left on site livestock could mistakenly eat it, which might in turn harm or kill them.	
<b>Significance</b>	<b>Negative low (14)</b>	<b>Negative low (14)</b>
Can impacts be mitigated?	Yes, management actions related to waste management are included in section (f) of the EMP.	

- Leakage of hazardous materials - The proposed prospecting activity will make use of machinery that use fuel and oil. Leakage of these oils and fuel can contaminate water supplies and must be prevented by constructing oil and diesel permeable bunds to ensure that any spills are suitably attenuated and not released into the environment.



<b>Leakage of hazardous materials</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Site (1)	Site (1)
Probability	Possible (2)	Unlikely (1)
Duration	Medium term (2)	Short term (1)
Magnitude	Medium (2)	Medium (2)
Reversibility	Partly reversible (2)	Completely reversible (1)
Irreplaceable loss of resources	Significant loss of resource (3)	Marginal loss of resource (2)
Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
<b>Significance</b>	<b>Negative low (22)</b>	<b>Negative low (14)</b>
Can impacts be mitigated?	Yes. It is therefore important that all management actions and mitigation measures included in the section (f) of EMPr are implemented to ensure that these impacts do not occur.	

- Noise disturbance - Prospecting activities will result in the generation of noise over a period of 2-3 years. Sources of noise are likely to include vehicles, the use of machinery such as drills and people working on the site; but prospecting activities should be limited to normal working days and some Saturdays and hours (06:00 – 18:00).

<b>Temporary noise disturbance</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Probable (3)	Possible (2)
Duration	Medium term (1)	Medium term (1)
Magnitude	Medium (2)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)
Cumulative impact	Low cumulative impact (2).	
<b>Significance</b>	<b>Negative low (20)</b>	<b>Negative low (9)</b>
Can impacts be mitigated?	Yes, management actions related to noise pollution are included in section (f) of the EMPr.	

**Indirect impacts:** The operational phase will have an indirect negative impact through the change in the sense of place and an indirect positive impact through the provision of additional electrical infrastructure.

- Potential impact on tourism – There are no tourist facilities in close proximity to the proposed area.

<b>Potential impacts on tourism</b>	<b>Pre-mitigation impact rating</b>	<b>Post mitigation impact rating</b>
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)

Probability	Unlikely (1)	Unlikely (1)
Duration	Medium term (2)	Medium term (2)
Magnitude	Low (1)	Low (1)
Reversibility	Completely reversible (1)	Completely reversible (1)
Irreplaceable loss of resources	N/A	N/A
Cumulative impact	N/A	
<b>Significance</b>	<b>Negative low (6)</b>	<b>Negative low (6)</b>
Can impacts be mitigated?	No mitigation required	

#### DECOMMISSIONING PHASE (MINE CLOSURE AND REHABILITATION)

**Direct impacts:** Typically, the major social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income. This has implications for the households who are directly affected, the communities within which they live. If infrastructures are removed after a 3/5-year period, the site will be returned to its natural state. Therefore, the physical environment will benefit from the closure of the prospecting area.

- Rehabilitation of the physical environment – The physical environment will benefit from the closure of the prospecting area. There is a slight chance to restore the site to its natural state, however rehabilitation will be done concurrently with all activities.

Rehabilitation of the physical environment	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Positive	Positive
Extent	Site (1)	Site (1)
Probability	Definite (4)	Definite (4)
Duration	Long term (3)	Long term (3)
Magnitude	High (3)	High (3)
Reversibility	N/A	N/A
Irreplaceable loss of resources	N/A	N/A
Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
<b>Significance</b>	<b>Positive low (27)</b>	<b>Positive low (27)</b>
Can impacts be mitigated?	No mitigation measures required.	

- Loss of employment - The decommissioning of the facility has the potential to have a negative social impact on the local community.

Loss of employment	Pre-mitigation impact rating	Post mitigation impact rating
Status (positive or negative)	Negative	Negative
Extent	Local (2)	Local (2)
Probability	Possible (2)	Possible (2)
Duration	Medium term (2)	Medium term (1)
Magnitude	Medium (2)	Medium (2)
Reversibility	Partly reversible (2)	Partly reversible (2)
Irreplaceable loss of resources	No loss of resource (1)	No loss of resource (1)

Cumulative impact	The impact would result in negligible to no cumulative effects (1)	
<b>Significance</b>	<b>Negative low (20)</b>	<b>Negative low (18)</b>
Can impacts be mitigated?	<p>The following mitigation measures are recommended:</p> <ul style="list-style-type: none"> <li>• All structures and infrastructure associated with the proposed facility should be dismantled and transported off-site on decommissioning;</li> <li>• <b>Elite International Logistics (Pty) Ltd</b> should establish an Environmental Rehabilitation Trust Fund to cover the costs of decommissioning and rehabilitation of disturbed areas.</li> </ul>	

**Indirect impacts:** No indirect impacts are anticipated from the decommissioning phase of the proposed development.

## K. SUMMARY OF THE FINDINGS AND RECOMMENDATIONS OF ANY SPECIALIST REPORT

(where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report):-

LIST OF STUDIES UNDERTAKEN	FINDINGS/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.
Phase I Cultural Heritage Resources Impact Assessment	<ul style="list-style-type: none"> <li>The only cultural heritage resource found which is older than sixty years is the 1950's farmhouse. This structure has low heritage value and has been sufficiently recorded.</li> <li>No other important cultural heritage resources or graves were found.</li> <li>There is no objection to the proposed development from a cultural heritage resources point of view.</li> <li>If during construction any cultural heritage resources or graves are unearthed all work has to be stopped until the site has been inspected and mitigated by a cultural heritage practitioner.</li> </ul>	X	EIA & EMPr
Ecological Desktop Study	<ul style="list-style-type: none"> <li>Protected trees and plants shall not be removed or damaged without prior approval and permits or licenses from the relevant authority.</li> <li>Vegetation clearance, if any, should be kept to the minimum required for the operation.</li> </ul>	X	EIA & EMPr
Palaeontological Desktop Assessment	The study area is largely underlain by the Cambell Rand Subgroup of the Ghaap Group (Transvaal Supergroup), with a small portion in the east underlain by red to flesh coloured wind-blown sand. Updated geology produced by the Council of Geosciences (Pretoria) refined the geological map and indicates that the study area is underlain by the Kalahari Group as well as the different Formations of the Cambel Rand Group that includes the Reivilo, Fairfield, Klippan and Wolhaarkop Formations. According to the PalaeoMap on	X	EIA & EMPr

	<p>the South African Heritage Resources Information System (SAHRIS) database, the Palaeontological Sensitivity of the Ghaap Group is Very High while that of the Kalahari Group is Moderate (Almond and Pether, 2009; Almond <i>et al.</i>, 2013). The suggested location is classified as having a Very High Palaeontology Theme Sensitivity in the DEA Screening Report.</p> <p>A Very High Palaeontological Significance is this allocated to this project. It is thus recommended that an EIA level palaeontology report should be conducted to assess the value and prominence of fossils in the development area and the effect of the proposed development on the palaeontological heritage. The purpose of the EIA Report is to elaborate on the issues and potential impacts identified during the scoping phase. A Phase 1 field-based assessment would be conducted with research in the site-specific study area as well as a comprehensive assessment of the impacts identified during the scoping phase.</p>		
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According to the DEA Screening Report, nine (9) specialist assessments need to be conducted, please see the table below for the list of these studies and also response from the EAP motivating the inclusion and the exclusion of the specialist study from the EIA.

Specialist assessments needed according to the DEA Screening Report:	Response
Terrestrial Biodiversity Impact Assessment	<p>According to the DEA Screening Report the following were recorded:</p> <ul style="list-style-type: none"> <li>• Aquatic Biodiversity Theme Sensitivity is very high</li> <li>• Terrestrial Biodiversity Theme Sensitivity is very high sensitivity</li> <li>• Agriculture Theme Sensitivity is a combination of medium sensitivity</li> <li>• Plant sensitivity is Low</li> <li>• Animal sensitivity is medium</li> </ul> <p>A desktop Ecological study has been conducted for this application, see Appendix 10.</p>
Aquatic Biodiversity Impact Assessment	
Plant Species Assessment	
Animal Species Assessment	
Agricultural Impact Assessment	

Archaeological and Cultural Heritage Impact Assessment	<p>The Archaeological and Cultural Heritage Theme Sensitivity mostly falls within low and to a certain extent on very high; therefore, a Phase I Cultural Heritage Resources Impact Assessment has been conducted for this project, see Appendix 10.</p> <p>If anything of Archaeological and Cultural importance are found on site during the pre-construction and construction phase of the development, then the management actions outlined in the Environmental Management Programme (EMPr) will be followed to mitigate the impact and a specialist will be contacted immediately.</p>
Palaeontology Impact Assessment	<p>The screening report, the Palaeontological Theme sensitivity of the project falls within very high sensitivity and to a lesser extent within medium sensitivity. A Palaeontological Desktop Assessment has been conducted for this project and included as Appendix 10.</p> <p>If anything of Paleontological importance is found on site during the pre-construction and construction phase of the development, then the management actions outlined in the Environmental Management Programme (EMPr) will be followed to mitigate the impact and a specialist will be contacted immediately.</p>
Civil Aviation	This application will not affect any Civil Aviation
Defence	This application will not affect any Defence

## **L. AN ENVIRONMENTAL IMPACT STATEMENT WHICH CONTAINS —**

### **(i) a summary of the key findings of the environmental impact assessment:**

This section provides a summary of the assessment and conclusions drawn from the proposed prospecting area. In doing so, it draws on the information gathered as part of the environmental impact assessment process and the knowledge gained by the environmental consultant during the course of the process and presents an informed opinion on the environmental impacts associated with the proposed project. The following conclusions can be drawn for the proposed prospecting activity:

- **Potential impacts on biodiversity:** The proposed prospecting right area is dominated by the Kuruman Thornveld as well as the Kuruman Mountain Bushveld. Both the above-mentioned vegetation types are part of the Eastern Kalahari Bushveld which is a sub-bioregion for the Savanna Biome. It is also observed from the CBA map that the proposed area falls mostly within ESA and ONA. The ecological study for the proposed revealed that the site is degraded and modified in some areas. It is clear that the destruction of the habitat within the prospecting area is inevitable. The significance of the impacts will be affected by the success of the mitigation measures implemented and the rehabilitation programme for the prospecting area.
- **Potential impact on heritage resources & Palaeontological resources:** Should fossils be exposed during construction work, it must immediately be reported to a palaeontologist so that an investigation and evaluation of the finds can be made.
- **Potential impacts on land use:** There is an existing prospecting right by the applicant on the applied property to prospect for Diamonds Kimberlite (DK), Gemstones except Diamonds (GS), Diamonds Alluvial (DA), Diamonds General (D), Diamonds (DIA) and Gold Ore (Au) with DMRE ref: NC30/5/1/1/2/11873PR. It is also shown on the google earth map (Figure 22) that there is an existing Iron ore and Manganese Mine by E&R Kadgame within the project area.
- **Potential social impacts:** The presence of construction workers poses a potential risk to family structures and social networks. While the presence of construction workers does not in itself constitute a social impact, the manner in which construction workers conduct themselves can impact on local communities. The most significant negative impact is associated with the disruption of existing family structures and social networks.
- **Potential negative impacts:** (noise, dust, soil degradation, storm water, traffic, health and safety) associated with the operation of the facility are expected to be of low-medium impact, of medium terms and site specific. These can be mitigated or negated through the implementation of practical and appropriate mitigation measures.
- **Positive impacts:** The prospecting of the applied minerals, may result in socio-economic benefit to the area.

All possible negative impacts and risks that have been identified in this report can be effectively mitigated and managed by implementing the migratory measures as set out in the Environmental Management Programme (EMPr) attached in Part B.





## **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 for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.**

Management objectives include:

- Ensure that the prospecting activity does not cause pollution to the environment or harm to persons.
- Minimise production of waste.
- All prospecting activities must be conducted in a manner that minimises noise impact, litter, environmental degradation and health hazards i.e. injuries.
- The mine must be kept neat and tidy during waste handling to prevent unsightliness and accidents.

Expected outcomes include:

- Minimum impacts on the environment as a result of alluvial diamond prospecting.
- Compliance with legislative requirements.
- Mine is neat and tidy and well managed.

## **N. FINAL PROPOSED ALTERNATIVES.**

*(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment)*

*This alternative asks the question, if there is not, from an environmental perspective, a more suitable location for the proposed activity.*

The farm Kadgame no. 558, portions 1 (Kadgame Number 3), 2 (Noordpool) and 4 (Bakenskop) are preferred due to the underlying minerals sought for. Therefore, no other areas have been secured by the applicant as there are already mining activities and an existing prospecting right over the area of interest. No other alternative has therefore been identified.

## **O. ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION.**

*(Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;)*

- The operational activities and relevant rehabilitation of disturbed areas should be monitored against the improved EMPr and all other relevant environmental legislation.
- A copy of the EMP should be made available onsite at all times.
- Implementation of the proposed mitigation measures set out in the EMPr.

**P. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE.**

*(Which relate to the assessment and mitigation measures proposed)*

The uncertainties in results are mostly related to the availability of information, time available to gather the relevant information as well as the sometimes-subjective nature of the assessment methodology. In terms of addressing the key issues the EAP is satisfied that there are no major gaps in knowledge and that the report provides sufficient information to conduct the significance rating and provide the environmental authority with sufficient information to make an informed decision.

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

*(And if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;)*

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

The applicant (Elite International Logistics (Pty) Ltd) has received an environmental authorization to prospect for Diamonds Kimberlite, Gemstone except Diamonds, Diamonds Alluvial, Diamonds General, Diamonds and Gold Ore on Portion 1 (Kadgame Number 3), Portion 2 (Noordpool) and Portion 4 (Bakenskop) of the farm Kadgame 558, Registration Division: Kuruman, Northern Cape province. DMRE ref: NC30/5/1/1/2/11873PR.

This application is therefore to amend the existing authorisation to include the prospecting of Aluminium ore (Al), Zinc Ore (Zn), Silicon ore (Si) and Copper ore (Cu) (DMRE ref: NC-00130-PR/102).

There are also existing mining activities within the project area, by Kadgame Mining (Pty) Ltd for Iron ore and Manganese ore. Based on the geological setting of the area as well as the surrounding mining activities in the area, the possibility to encounter further mineral reserves were identified. No other properties have been secured by the applicant and the site is therefore regarded as the preferred site, and alternatives are not considered.

The option of not approving the activities will result in a significant loss of valuable information regarding the mineral status (in terms of the minerals applied to be added to the existing prospecting right) present on these properties. Also, the investment made in the current prospecting right will also go to waste.

**Conditions that must be included in the authorisation**

- The operational activities and relevant rehabilitation of disturbed areas should be monitored against the improved EMPr and all other relevant environmental legislation.
- A copy of the EMP should be always made available onsite.
- Implementation of the proposed mitigation measures set out in the EMPr.

The EMPr should be binding on all managers and contractors operating/utilizing the site.

The applicant shall familiarize himself with the content of this document and the attached specialist studies and the requirements/conditions thereof.

**R. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED.**

For a minimum of 5 years.

**S. AN UNDERTAKING UNDER OATH OR AFFIRMATION BY THE EAP IN RELATION TO:**

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

I, Ms. Deshney Mapoko Reg EAP. EAPASA herewith confirms:

- A.** the correctness of the information provided in the reports ☒
- B.** the inclusion of comments and inputs from stakeholders and I&APs ; ☒
- C.** the inclusion of inputs and recommendations from the specialist reports where relevant; ☒and
- D.** the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed; ☒



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Signature of the environmental assessment practitioner:

Milnex CC

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Name of company:

22/08/2023

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Date:

## T. FINANCIAL PROVISION

(where applicable, details of any financial provision[s] for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;)

### CALCULATION OF THE QUANTUM

Applicant: Evaluators:		Elite International Logistics (Pty) LTD, Farm Kadgame 558, District Kuruman Milnex CC			Ref No.: Date:		NC 30/5/1/1/2/11873 PR Jun-23	
No.	Description	Unit	A	B	C	D	E=A*B*C*D	
			Quantity	Master Rate	Multiplication factor	Weighting factor 1	Amount (Rands)	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	420	18,36	1	1	7711,2	
2 (A)	Demolition of steel buildings and structures	m2	24	255,81	1	1	6139,44	
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	376,99	1	1	0	
3	Rehabilitation of access roads	m2	800	45,78	1	1	36624	
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	444,31	1	1	0	
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	242,35	1	1	0	
5	Demolition of housing and/or administration facilities	m2	24	511,63	1	1	12279,12	
6	Opencast rehabilitation including final voids and ramps	ha	0,2	260391,13	0,52	1	27080,67752	
7	Sealing of shafts adits and inclines	m3	0	137,33	1	1	0	
8 (A)	Rehabilitation of overburden and spoils	ha	0,1	178800,11	1	1	17880,011	
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-pouring potential)	ha	0,02	222692,31	1	1	4453,8462	
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (pouring potential)	ha	0,02	645804,02	1	1	12936,0804	
9	Rehabilitation of subsided areas	ha	0,02	149718,17	1	1	2994,3634	
10	General surface rehabilitation	ha	0,2	141639,85	1	1	28327,97	
11	River diversions	ha	0	141639,85	1	1	0	
12	Fencing	m	50	161,57	1	1	8078,5	
13	Water management	ha	0,01	53855,46	1	1	538,5546	
14	2 to 3 years of maintenance and aftercare	ha	0,2	18849,41	1	1	3769,882	
15 (A)	Specialist study	Sum	0			1	0	
15 (B)	Specialist study	Sum				1	0	
Sub Total 1							18881,36451	
1	Preliminary and General		20257,63741	weighting factor 2 1			20257,63741	
2	Contingencies			18881,36451			18881,36451	
Subtotal 2							205952,65	
VAT (15%)							30892,90	
Grand Total							236846	

### A. Explain how the aforesaid amount was derived.

The closure cost estimate provided above is aligned with the Guideline Document for the Evaluation of Quantum of Closure related Financial Provision Provided by a Mine, by the DMR (January, 2005). The amount was calculated by Milnex CC.

### B. Confirm that this amount can be provided for from operating expenditure. (Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the prospecting work programme, Financial and Technical Competence Report or Mine Work Programme as the case may be).

### Financial Guarantee

The financial guarantee for the rehabilitation for land disturbed by **Elite International Logistics (Pty) Ltd** will be submitted.

### Rehabilitation Fund

**Elite International Logistics (Pty) Ltd** will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

#### **U. DEVIATIONS FROM THE APPROVED SCOPING REPORT AND PLAN OF STUDY.**

**(i) Any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and**

None of the methodologies approved for the scoping report were deviated.

**(ii) Motivation for the deviation.**

Not applicable

#### **V. ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY; AND**

#### **W. COMPLIANCE WITH THE PROVISIONS OF SECTIONS 24(4)(A) AND (B) OF THE ACT**

Read with Section 24 (3) (A) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA Report must include the:

- ii. 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 mining on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as **Appendix 2.19.1** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12. herein).

The applied prospecting activities will not impact directly on any socio-economic aspects. Indirect socio-economic benefits are expected to be associated with the creation of employment.

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

The diamonds alluvial prospecting will not impact on any heritage estate referred to in section 3(2) of the National Heritage Resources Act. In terms of the National Heritage Resource Act no 25 of 1999. Heritage resources including archaeological and paleontological sites over 100 years old, graves older than 60 years, structure older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resource Authority, which means that before such sites are disturbed by development it is incumbent on the developer to ensure that a heritage impact assessment is done and the Provincial Heritage Resources Authority and SAHRA will be contacted immediately, and work will stop.



The heritage study for this proposed area mentioned that the only cultural heritage resource found within the site area is the farmhouse that is older than 60 years (made in the 1950's). The heritage specialist advised that the structure has low heritage value and has been sufficiently recorded. No other important cultural heritage resources or graves were found on site. There is, therefore, no objection from the heritage specialist to the proposed development from a cultural heritage resources point of view.

**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 4**).

The farm Kadgame no. 558, portions 1 (Kadgame Number 3), 2 (Noordpool) and 4 (Bakenskop) are preferred due to the underlying minerals sought for. Therefore, no other areas have been secured by the applicant as there are already mining activities and an existing prospecting right over the area of interest. No other alternative has therefore been identified.

## PART B

### ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

**An EMPr must comply with section 24N of the Act and include—**

**A. DETAILS OF—**

- (i) the EAP who prepared the EMPr; and
- (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;

Name of Practitioner	Qualifications	Contact details
Ms. Deshney Mapoko Reg. EAP: EAPASA	National Diploma in Environmental Science (refer to <b>Appendix 1</b> )	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:deshney@milnex-sa.co.za">deshney@milnex-sa.co.za</a>
Lizanne Esterhuizen Reg. EAP: EAPASA	Honours Degree in Environmental Science (refer to <b>Appendix 1</b> )	Tel No.: (018) 011 1925 Fax No.: (053) 963 2009 e-mail address: <a href="mailto:lizanne@milnex-sa.co.za">lizanne@milnex-sa.co.za</a>

It is hereby confirmed that the requirements for the provision of the details and expertise of the EAP are contained in Part A, section 1(a) as required. The Curriculum Vitae for the responsible EAP is contained in **Appendix 1 and 2**.

## **B. DESCRIPTION OF THE ASPECTS OF THE ACTIVITY**

*(A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;)*

It is hereby confirmed that the requirements to describe the aspects of the activity that are required by the EMP is already included in Part A, section 1(h).

## **C. COMPOSITE MAP**

**(A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that [any areas that] should be avoided, including buffers;)**

Refer to Locality Map, attached as in **Appendix 3**.

## **D. A DESCRIPTION OF THE IMPACT MANAGEMENT [OBJECTIVES] OUTCOMES, INCLUDING MANAGEMENT STATEMENTS, IDENTIFYING THE IMPACTS AND RISKS THAT NEED TO BE AVOIDED, MANAGED AND MITIGATED AS IDENTIFIED THROUGH THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR ALL PHASES OF THE DEVELOPMENT INCLUDING—**

- i) **Determination of closure objectives.** (Ensure that the closure objectives are informed by the type of environment described in 2.4 herein).

Closure objectives for the proposed prospecting activities will aim to ensure that the residual post-closure impacts be minimized and be acceptable to relevant parties. To achieve these closure objectives, the following will be implemented:

- All prospecting related infrastructure, foundations and concrete areas will be decommissioned, removed from the site and appropriately disposed of. Reclaimable structures such as metal, electrical installations or equipment will be sold for re-use or as scrap.
- All disturbed areas within the site not already vegetated will be re-vegetated with appropriate indigenous, ecologically adapted species appropriate to the area and the final land use as soon as possible after operation ceases. Progress of vegetation growth/establishment, stability and drainage/erosion will be monitored and, in the event of adverse trends being identified, corrective measures will be implemented.
- Vegetation monitoring will consider, inter alia, the establishment of perennial ground cover and infestation by alien invasive plant species. The encroachment of indigenous vegetation into the area will be used as an indication of a stable, self-sustaining vegetation cover with little risk of retrogressing to a situation where are and water pollution may occur.
- Final landforms must be resilient to perturbation and also be self-sustaining to obviate/limit further/ongoing interventions and maintenance by **Elite International Logistics (Pty) Ltd**. The remaining impacts be of an acceptable nature with minimal deterioration over time.

- The final outcome of the mine site rehabilitation would be productive systems, where required sustaining either cattle or wildlife.
- Environmental and human quality of life, including health and safety requirements in general, would not be compromised; and
- Closure is achieved in an efficient and cost-effective manner as possible and with minimum socioeconomic changes.

#### **E. A DESCRIPTION AND IDENTIFICATION OF IMPACT MANAGEMENT OUTCOMES REQUIRED FOR THE ASPECTS CONTEMPLATED IN PARAGRAPH (D);]**

The above goal is underpinned by more specific objectives listed below.

##### **1. Upfront planning/development**

To provide overall guidance and direction to closure planning and/or the implementation of progressive closure measures over the remaining over the prospecting life.

##### **2. Physical stability**

To ensure that surface infrastructure and prospecting residue and/or disturbances that are present at processing plant decommissioning will be removed and/or stabilised in a manner that these will not compromise post-closure land use and be sustainable long-term landforms.

- Closure, removal and disposal of all surface infrastructure that has no beneficial post-closure use.
- Shaping and vegetating the remaining earth embankments, trenches, etc. to stabilise slopes and integrate with surrounding topography.

##### **3. Environmental quality**

To ensure that local environmental quality is not adversely affected by possible physical effects arising from prospecting operations and the prospecting site after closure. This will be achieved by:

- Avoiding and/or limiting the following during prospecting operations which could result in adverse effects that could not be readily addressed and/or mitigated at mine closure.
  - Dust fall-out areas surrounding the prospecting site.
  - Wash-off and/or mobilisation of chemically contaminated soils and sediments from the prospecting site that could have long term adverse effects on local aquatic health and/or other water uses.
  - Possible shallow groundwater contamination adversely affecting the quality of the local water resource and its beneficial use.
- Limiting the potential for dust generation on the rehabilitated prospecting site that could cause nuisance and/or health effects to surrounding landowners;
- Limiting the possible adverse water quality and quantity effects arising from the rehabilitated prospecting site to ensure that long term beneficial use of local resources is not compromised;
- Conducting soil clean-up/remediation to ensure that the planned land use could be implemented and maintained;

#### **4. Health and safety**

To limit the possible health and safety treats due to terrain hazards to humans and animals utilizing the rehabilitated prospecting site after closure by:

- Demonstrating through upfront soil testing that any resultant inorganic and organic pollution present on the site is acceptable;
- Removal of potential contaminants such as hydrocarbons and chemicals off site;
- Shaping of embankments and trenches to safe slopes and reintegrating of these into surrounding topography.
- Ensuring that the environmental quality as reflected above is achieved.

#### **5. Land capability / land use**

To ensure that the required land capability to achieve and support the planned land use can be achieved over the prospecting site by:

- Clean-up and reclamation of contaminated soil areas in order not to compromise the above land use planning earmarked for implementation.
- To ensure that the overall rehabilitated prospecting site is free draining.
- Transferring prospecting related surface infrastructure to third parties for beneficial use after closure.

#### **6. Aesthetic quality**

To ensure that the rehabilitated prospecting site will display, at a minimum, an acceptable aesthetic appearance that would not compromise the planned land use by leaving behind:

- A prospecting area that is properly cleared-up with no fugitive/scattered waste piles
- Rehabilitated prospecting area that is free draining and disturbed areas that are suitably vegetated.
- Rehabilitated prospecting residues that are suitably landscaped, blending with the surrounding environment as far as possible.
- Shaped and rehabilitated terrace and hard stand areas, roughly emulating the local natural surface topography.

#### **7. Landscape viability**

To create a landscape that is self-sustaining and over time will evolve/converge to the desired ecosystem structure, function and composition by:

- Conducting surface profiling, with associated material movement optimisation, to obtain a landscape resembling the natural landscapes to support the succession trajectory towards a climax ecological system.
- Establishing woody patches and create “rough and loose” areas for pioneer specie establishment around the respective patches.
- Establishing pioneer species as follows:
  - Collected and prepared seeds for broad casting;
  - Seedlings grown on on-site nursery;
  - Cuttings collected from surrounding veld areas;
- Conducting rehabilitation monitoring and corrective action as required.

#### **8. Biodiversity**

To encourage, where appropriate, the re-establishment of native vegetation on the rehabilitated mine site such the terrestrial biodiversity is largely re-instated over time, by:

- Stabilising disturbed areas to prevent erosion in the short- to medium term until a suitable vegetation cover has established; and

- Establishing viable self-sustaining vegetation communities of local fauna, as far as possible.

**F. A DESCRIPTION OF PROPOSED IMPACT MANAGEMENT ACTIONS, IDENTIFYING THE MANNER IN WHICH THE IMPACT MANAGEMENT [OBJECTIVES AND] OUTCOMES CONTEMPLATED IN PARAGRAPH (D) [AND (E)] WILL BE ACHIEVED, AND MUST, WHERE APPLICABLE, INCLUDE ACTIONS TO —**

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

The Rehabilitation & Closure Plan is attached as **Appendix 8**.

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

CALCULATION OF THE QUANTUM							
Applicant: Evaluators:		Elite International Logistics (Pty) LTD, Farm Kadgame 558, District Kuruman Milnex CC			Ref No.: Date:		
					NC 30/5/1/1/2/11873 PR Jun-23		
No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	420	18,36	1	1	7711,2
2 (A)	Demolition of steel buildings and structures	m2	24	255,81	1	1	6139,44
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	376,99	1	1	0
3	Rehabilitation of access roads	m2	800	45,78	1	1	36624
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	444,31	1	1	0
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5	Demolition of housing and/or administration facilities	m2	24	511,63	1	1	12279,12
6	Opencast rehabilitation including final voids and ramps	ha	0,2	260391,13	0,52	1	27080,67752
7	Sealing of shafts adits and inclines	m3	0	137,33	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0,1	178800,11	1	1	17880,011
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0,02	222692,31	1	1	4453,8462
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0,02	646804,02	1	1	12936,0804
9	Rehabilitation of subsided areas	ha	0,02	149718,17	1	1	2994,3634
10	General surface rehabilitation	ha	0,2	141639,85	1	1	28327,97
11	River diversions	ha	0	141639,85	1	1	0
12	Fencing	m	50	161,57	1	1	8078,5
13	Water management	ha	0,01	53855,46	1	1	538,5546
14	2 to 3 years of maintenance and aftercare	ha	0,2	18849,41	1	1	3769,882
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							168813,6451
1	Preliminary and General		20257,63741		weighting factor 2 1		20257,63741
2	Contingencies			16881,36451			16881,36451
Subtotal 2							20592,65
VAT (15%)							3089,290
Grand Total							236846

- a. **Confirm that the financial provision will be provided as determined.**

**Financial Guarantee**

The financial guarantee for the rehabilitation for land disturbed **Elite International Logistics (Pty) Ltd** will be submitted.

**Rehabilitation Fund**

**Elite Internationa Logistics (Pty) Ltd** will also make provision for rehabilitation during closure by establishing a rehabilitation trust.

### 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><b>(E.g. For prospecting</b> - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route <b>etc...etc...etc</b></p> <p><b>E.g. For mining</b>,- 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 m<sup>2</sup>)</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 regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-..</p> <p>Upon cessation of the individual activity</p> <p>Or. Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>
<p>Clearance of vegetation</p> <p>± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p>	<p>Pitting and trenching phase- (construction and operation phase)</p>	<p>±2995 Ha Total hectares to be disturbed. Concurrent backfilling will take place as far as possible in order to rehabilitate.</p>	<p>If the development is approved, contractors must ensure that no mammalian species are disturbed, trapped, hunted or killed. If the development is approved, every effort should be made to confine the footprint to the blocks allocated for the development and have the least possible edge effects on the surrounding area. The EMPr also provides numerous mitigation measures.</p>	<p>Compliance with Duty of Care as detailed within NEMA</p>	<p>Duration of operations on the prospecting activities.</p>



			<p>The potential impacts associated with damage to and loss of farmland should be effectively mitigated. The aspects that should be covered include:</p> <ol style="list-style-type: none"> <li>1. The site should be fenced off prior to commencement of construction activities;</li> <li>2. The footprint associated with the construction related activities (access roads, construction platforms, workshop etc.) should be confined to the fenced off area and minimised where possible;</li> <li>3. An Environmental Control Officer (ECO) must be appointed to monitor the establishment phase of the construction phase;</li> <li>4. All areas disturbed by construction related activities, such as access roads on the site, construction platforms, workshop area etc., should be rehabilitated at the end of the construction phase;</li> <li>5. The implementation of a rehabilitation programme should be included in the terms of reference for the contractor/s appointed. Specifications for the</li> </ol>		
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			<p>rehabilitation are provided throughout the EMPr.</p> <p>6. The implementation of the Rehabilitation Programme should be monitored by the ECO.</p> <p>7. Any activities that take place within 32 meters of a wetland or watercourse or the 1:100 year flood lines will require authorisation in terms of the relevant regulations of NEMA, however as far as possible infrastructure should be placed outside of wetlands and / or buffer lines.</p> <p>8. No stockpiling should take place within a watercourse or the 32m buffer.</p> <p>9. All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds</p> <p>10. Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed stream banks;</p> <p>11. Ensure that erosion management and sediment</p>		
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			<p>controls are strictly implemented from the beginning of site clearing activities, particularly as the soils in the study area are prone to erosion;</p> <p>12. All areas should be re-sloped and top-soiled where necessary and reseeded with indigenous grasses to stabilise the loose material;</p> <p>13. Edge effects such as erosion must be strictly monitored and managed;</p> <p>14. Sensitivity maps have been developed for the study area, indicating the drainage lines and riparian systems, and their relevant buffer zones. It is recommended that this sensitivity map be considered during all phases of the development and with special mentioning of the planning of infrastructure, in order to aid in the conservation of and minimise impact on the riparian and aquatic habitat and resources within the study area;</p> <p>15. Rehabilitation must ensure that the wetland structure and function are reinstated in such a way as to ensure the ongoing</p>		
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			<p>functionality of the larger wetland systems at pre-prospecting levels.</p> <p>16. Any areas where bank failure is observed, due to the prospecting or prospecting impacts, should be immediately repaired;</p> <p>17. As far as possible the existing road network should be utilised, minimising the need to develop new access routes resulting in an increased impact on the local environment. Should temporary roads or access routes be necessary and unavoidable, proper planning must take place and the site sensitivity plan must be taken into consideration. If additional roads are required, then wherever feasible such roads should be constructed a distance from the more sensitive riparian areas and not directly adjacent thereto. If crossings are required they should cross the systems at right angles, as far as possible to minimise impacts in the receiving environment;</p> <p>18. The duration of impacts on the riverine and drainage line systems should be minimised as</p>		
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			<p>far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised;</p> <p>19. Stabilisation of banks by employing one of the individual techniques below or a combination thereof, is essential, given the inherent susceptibility of the soils to erosion. Such measures include:</p> <p>20. Re-sloping of banks to a maximum of a 1:3 slope;</p> <p>21. Revegetation of re-profiled slopes;</p> <p>22. Temporary stabilisation of slopes using geotextiles; and</p> <p>23. Installation of gabions and reno-mattresses.</p> <p>24. To prevent the further erosion of soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas particularly susceptible to erosion;</p> <p>25. Install erosion berms during construction to prevent gully formation:</p> <p>26. Berms every 50m should be installed where any disturbed</p>		
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			<p>soils have a slope of less than 2%,</p> <p>27. Berms every 25m where the track slopes between 2% and 10%,</p> <p>28. Berms every 20m where the track slopes between 10% and 15% and,</p> <p>29. Berms every 10m where the track slope is greater than 15%;</p> <p>30. Sheet runoff from access roads should be slowed down by the strategic placement of berms and sandbags;</p> <p>31. All soils compacted as a result of construction activities falling outside of project areas should be ripped and profiled. Special attention should be paid to alien and invasive control within these areas. Alien and invasive vegetation control should take place throughout all construction and rehabilitation phases to prevent loss of floral habitat;</p> <p>32. As far as possible, all rehabilitation activities should occur in the low flow season, during the drier winter months.</p> <p>33. Trenches and deep excavations should not be left open for extended periods of time as</p>		
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			fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.		
Construction of roads	Pitting and trenching phase- (construction and operation phase)	± 500m	<p>34. Planning of access routes to the site for construction/ prospecting purposes shall be done in conjunction with the Contractor and the Landowner. All agreements reached should be documented and no verbal agreements should be made. The Contractor shall clearly mark all access roads. Roads not to be used shall be marked with a "NO ENTRY for prospecting vehicles" sign.</p> <p>35. Construction routes and required access roads must be clearly defined.</p> <p>36. Damping down of the un-surfaced roads must be implemented to reduce dust and nuisance.</p> <p>37. Soils compacted by construction/ prospecting activities shall be deep ripped to loosen compacted layers and re-graded to even running levels.</p> <p>38. The contractor must ensure that damage caused by related traffic to the gravel access road</p>	Compliance with Duty of Care as detailed within NEMA	Duration of operations on the prospecting activities.



			<p>is repaired continuously. The costs associated with the repair must be borne by the contractor;</p> <p>39. Dust suppression measures must be implemented for heavy vehicles such as wetting of gravel roads on a regular basis and ensuring that vehicles used to transport the gravel are fitted with tarpaulins or covers;</p> <p>40. All vehicles must be road-worthy and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits.</p>		
<p>Prospecting activities - Soils and geology</p> <p>± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p>	<p>Pitting and trenching phase- (construction and operation phase)</p>	<p>±2995 Ha Total hectares to be disturbed. Concurrent backfilling will take place as far as possible in order to rehabilitate.</p>	<p>41. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil (If topsoil exists) and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas.</p>	<p>Compliance with Duty of Care as detailed within NEMA</p>	<p>Duration of operations on the mine</p>

			<p>42. Care must be taken not to mix topsoil and subsoil during stripping.</p> <p>43. The topsoil must be conserved on site in and around the pit/trench area.</p> <p>44. Subsoil and overburden in the prospecting area should be stockpiled separately to be returned for backfilling in the correct soil horizon order.</p> <p>45. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms, trenches or low brick walls around their bases.</p> <p>46. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.</p> <p>47. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should</p>		
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			<p>be attained and given to the project manager.</p> <p>48. The impact on the geology will be permanent. There is no mitigation measure.</p>		
<p>Prospecting activities – excavations</p> <p>± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p>	<p>Pitting and trenching phase- (construction and operation phase)</p>	<p>± 2995 Ha</p> <p>Total hectares to be disturbed.</p> <p>Concurrent backfilling will take place as far as possible in order to rehabilitate.</p>	<p>1. The prospecting activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development.</p> <p>2. Mine, pans, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed into the system.</p> <p>3. Truck traffic should be routed away from noise sensitive areas, where possible.</p> <p>4. Noise levels must be kept within acceptable limits.</p> <p>5. Noisy operations should be combined so that they occur where possible at the same time.</p> <p>6. Mine workers to wear necessary ear protection gear.</p>	<p>Compliance with Duty of Care as detailed within NEMA</p>	<p>Duration of operations on the prospecting area</p>

			<p>7. Noisy activities to take place during allocated hours.</p> <p>8. Noise from labourers must be controlled.</p> <p>9. Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site.</p> <p>10. The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub-Contractors by the Contractors own transport.</p> <p>11. Implementation of enclosure and cladding of processing plants.</p> <p>12. Applying regular and thorough maintenance schedules to equipment and processes. An increase in noise emission levels</p>		
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			very often is a sign of the imminent mechanical failure of a machine.		
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### IMPACT MANAGEMENT OUTCOMES

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ());

<b>ACTIVITY</b> (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, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.).	<b>POTENTIAL IMPACT</b>  (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	<b>ASPECTS AFFECTED</b>	<b>PHASE</b> In which impact is anticipated  (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	<b>MITIGATION TYPE</b>  (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"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> <li>• Remedy through rehabilitation.</li> </ul>	<b>STANDARD TO BE ACHIEVED</b>  (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Clearance of vegetation	Loss or fragmentation of habitats	Fauna & flora	Pitting and trenching phase- (construction and operation phase)	<b>Existing vegetation</b> <ol style="list-style-type: none"> <li>1. Vegetation removal must be limited to the prospecting area.</li> <li>2. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step.</li> </ol>	Minimisation of impacts to acceptable limits

				<p>3. No vegetation to be used for firewood.</p> <p>4. Exotic and invasive plant species should not be allowed to establish, if the development is approved.</p> <p><b>Rehabilitation</b></p> <p>5. All damaged areas shall be rehabilitated upon completion of the contract.</p> <p>6. Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative conditions prevailing prior to construction.</p> <p>7. All natural areas impacted during construction/ prospecting must be rehabilitated with locally indigenous grasses typical of the representative botanical unit.</p> <p>8. Rehabilitation must take place in a phased approach as soon as possible.</p> <p>9. Rehabilitation process must make use of species indigenous to the area. Seeds from surrounding seed banks can be used for re-seeding.</p> <p>10. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.</p>	
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				<p>11. Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.</p> <p><b>Demarcation of prospecting area</b></p> <p>12. All plants not interfering with prospecting operations shall be left undisturbed clearly marked and indicated on the site plan.</p> <p>13. The prospecting area must be well demarcated and no construction/ prospecting activities must be allowed outside of this demarcated footprint.</p> <p>14. Vegetation removal must be phased in order to reduce impact of construction/ prospecting.</p> <p>15. Site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.</p> <p>16. Strict and regular auditing of the prospecting process to ensure containment of the prospecting and laydown areas.</p> <p>17. Soils must be kept free of petrochemical solutions that may be kept on site during construction/ prospecting. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.</p>	
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				<p><b>Utilisation of resources</b></p> <p>18. Gathering of firewood, fruit, muti plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.</p> <p><b>Exotic vegetation</b></p> <p>19. Alien vegetation on the site will need to be controlled.</p> <p>20. The Contractor should be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.</p> <p>21. The spread of exotic species occurring throughout the site should be controlled.</p> <p><b>Herbicides</b></p> <p>22. Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.</p>	
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				<p>23. The use of pesticides and herbicides on the site must be discouraged as this impact on important pollinator species of indigenous vegetation.</p> <p><b>Fauna</b></p> <p>24. Rehabilitation to be undertaken as soon as possible after the prospecting activities have been completed.</p> <p>25. No trapping or snaring to fauna on the construction/ prospecting site should be allowed.</p> <p>26. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development.</p>	
<p>Prospecting activities – excavations</p> <p>± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p>	Loss of topsoil	Soil	Pitting and trenching phase-(construction and operation phase)	<p>1. The Contractor should, prior to the commencement of earthworks determine the average depth of topsoil and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas.</p> <p>2. Care must be taken not to mix topsoil and subsoil during stripping.</p>	Minimisation of impacts to acceptable limits

				<ol style="list-style-type: none"> <li>3. The topsoil must be conserved on site in and around the pit/trench area.</li> <li>4. Subsoil and overburden in the prospecting area should be stockpiled separately to be returned for backfilling in the correct soil horizon order.</li> <li>5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases.</li> <li>6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.</li> <li>7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager.</li> </ol> <p>Establish an effective record keeping system for each area where soil is disturbed for prospecting purposes. These records</p>	
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				<p>should be included in environmental performance reports, and should include all the records below.</p> <ul style="list-style-type: none"> <li>• Record the GPS coordinates of each area.</li> <li>• Record the date of topsoil stripping.</li> <li>• Record the GPS coordinates of where the topsoil is stockpiled.</li> <li>• Record the date of cessation prospecting activities at the particular site.</li> <li>• Photograph the area on cessation of prospecting activities.</li> <li>• Record date and depth of re-spreading of topsoil.</li> <li>• Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time.</li> </ul>	
	Erosion	Soil Air Water	Pitting and trenching phase- (construction and operation phase)	<ol style="list-style-type: none"> <li>1. An effective system of run-off control should be implemented, where it is required, that collects and safely disseminates run-off water from all hardened surfaces and prevents potential down slope erosion.</li> <li>2. Periodical site inspection should be included in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically</li> </ol>	Minimisation of impacts to acceptable limits

				<p>records the occurrence of any erosion on site or downstream.</p> <ol style="list-style-type: none"> <li>3. Wind screening and stormwater control should be undertaken to prevent soil loss from the site.</li> <li>4. The use of silt fences and sand bags must be implemented in areas that are susceptible to erosion.</li> <li>5. Other erosion control measures that can be implemented are as follows: <ul style="list-style-type: none"> <li>o Brush packing with cleared vegetation</li> <li>o Mulch or chip packing</li> <li>o Planting of vegetation</li> <li>o Hydroseeding/hand sowing</li> </ul> </li> <li>6. Sensitive areas need to be identified prior to construction/ prospecting so that the necessary precautions can be implemented.</li> <li>7. All erosion control mechanisms need to be regularly maintained.</li> <li>8. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.</li> <li>9. Retention of vegetation where possible to avoid soil erosion.</li> <li>10. Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.</li> <li>11. Re-vegetation of disturbed surfaces should occur immediately after construction/ prospecting activities</li> </ol>	
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				<p>are completed. This should be done through seeding with indigenous grasses.</p> <p>12. No impediment to the natural water flow other than approved erosion control works is permitted.</p> <p>13. To prevent stormwater damage, the increase in stormwater run-off resulting from construction/ prospecting activities must be estimated and the drainage system assessed accordingly.</p> <p>14. Stockpiles not used in three (3) months after stripping must be seeded or backfilled to prevent dust and erosion.</p>	
	Air Pollution	Air	Pitting and trenching phase- (construction and operation phase)	<p><b>Dust control</b></p> <ol style="list-style-type: none"> <li>1. Wheel washing and damping down of un-surfaced and un-vegetated areas.</li> <li>2. Retention of vegetation where possible will reduce dust travel.</li> <li>3. Clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.</li> <li>4. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust.</li> <li>5. The Contractor shall be responsible for dust control on site to ensure no</li> </ol>	Minimisation of impacts to acceptable limits

				<p>nuisance is caused to the neighbouring communities.</p> <p>6. A speed limit of 30km/h must not be exceeded on site.</p> <p>7. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.</p> <p>8. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled.</p> <p><b>Odour control</b></p> <p>9. Regular servicing of vehicles in order to limit gaseous emissions.</p> <p>10. Regular servicing of onsite toilets to avoid potential odours.</p> <p><b>Rehabilitation</b></p> <p>11. The Contractor should commence rehabilitation of exposed soil surfaces as soon as practical after completion of earthworks.</p> <p><b>Fire prevention</b></p> <p>12. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires.</p> <p>13. The Contractor shall have operational fire-fighting equipment</p>	
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				available on site at all times. The level of firefighting equipment must be assessed and evaluated through a typical risk assessment process.	
	Noise		Pitting and trenching phase- (construction and operation phase)	<ol style="list-style-type: none"> <li>1. The prospecting activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development.</li> <li>2. Mine, crushers, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed into the system.</li> <li>3. Truck traffic should be routed away from noise sensitive areas, where possible.</li> <li>4. Noise levels must be kept within acceptable limits.</li> <li>5. Noisy operations should be combined so that they occur where possible at the same time.</li> <li>6. Mine workers to wear necessary ear protection gear.</li> <li>7. Noisy activities to take place during allocated hours.</li> <li>8. Noise from labourers must be controlled.</li> </ol>	Minimisation of impacts to acceptable limits

				<p>9. Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site.</p> <p>10. The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub-Contractors by the Contractors own transport.</p> <p>11. Implementation of enclosure and cladding of processing plants.</p> <p>12. Applying regular and thorough maintenance schedules to equipment and processes. An increase in noise emission levels very often is a sign of the imminent mechanical failure of a machine.</p>	
	Impact on potential cultural and heritage artefacts	Heritage	Pitting and trenching phase- (construction and operation phase)	<p>1. Any finds must be reported to the nearest National Monuments office to comply with the National Heritage Resources Act (Act No 25 of 1999) and to DEA.</p>	Minimisation of impacts to acceptable limits



				<ol style="list-style-type: none"> <li>2. Local museums as well as the South African Heritage Resource Agency (SAHRA) should be informed if any artefacts are uncovered in the affected area.</li> <li>3. 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.</li> <li>4. Any discovered artefacts shall 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. Permits shall be obtained from the SAHRA should the proposed site affect any world heritage sites or if any heritage sites are to be destroyed or altered.</li> </ol>	
Waste management		Pollution	Pitting and trenching phase- (construction and operation phase)	<b>Litter management</b> <ol style="list-style-type: none"> <li>1. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction site.</li> <li>2. The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at registered/licensed landfill.</li> <li>3. Good housekeeping practices should be implemented to regularly</li> </ol>	Minimisation of impacts to acceptable limits

				<p>maintain the litter and rubble situation on the construction site.</p> <ol style="list-style-type: none"> <li>4. If possible and feasible, all waste generated on site must be separated into glass, plastic, paper, metal and wood and recycled. An independent contractor can be appointed to conduct this recycling.</li> <li>5. Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor the neatness of the work sites as well as the Contractor campsite.</li> <li>6. Skip waste containers should be maintained on site. These should be kept covered and arrangements made for them to be collected regularly.</li> <li>7. All waste must be removed from the site and transported to a landfill site promptly to ensure that it does not attract vermin or produce odours.</li> <li>8. Where a registered waste site is not available close to the construction site, the Contractor shall provide a method statement with regard to waste management.</li> <li>9. A certificate of disposal shall be obtained by the Contractor and kept on file, if relevant.</li> <li>10. Under no circumstances may solid waste be burnt on site.</li> </ol>	
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				<p>11. All waste must be removed promptly to ensure that it does not attract vermin or produce odours.</p> <p><b>Hazardous waste</b></p> <p>12. All waste hazardous materials must be carefully stored as advised by the ECO, and then disposed of offsite at a licensed landfill site, where practical. Incineration may be used where relevant.</p> <p>13. Contaminants to be stored safely to avoid spillage.</p> <p>14. Machinery must be properly maintained to keep oil leaks in check.</p> <p>15. All necessary precaution measures shall be taken to prevent soil or surface water pollution from hazardous materials used during construction and any spills shall immediately be cleaned up and all affected areas rehabilitated.</p> <p><b>Sanitation</b></p> <p>16. The Contractor shall install mobile chemical toilets on the site.</p> <p>17. Staff shall be sensitized to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed.</p>	
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				<p>18. Toilets shall be serviced regularly and the ECO shall inspect toilets regularly.</p> <p>19. Toilets should be no closer than 50m or above the 1:100 year flood line from any natural or manmade water bodies or drainage lines or alternatively located in a place approved of by the Engineer.</p> <p>20. Under no circumstances may open areas, neighbors fences or the surrounding bush be used as a toilet facility.</p> <p>21. The construction of “Long Drop” toilets is forbidden, but rather toilets connected to the sewage treatment plant, or French drain system methods may be investigated.</p> <p>22. Potable water must be provided for all construction staff.</p> <p><b>Remedial actions</b></p> <p>23. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site.</p> <p>24. Excavation of contaminated soil must involve careful removal of soil using appropriate tools/machinery to storage containers until treated or disposed of at a licensed hazardous landfill site.</p>	
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				<p>25. The ECO must determine the precise method of treatment for polluted soil. This could involve the application of soil absorbent materials as well as oil-digestive powders to the contaminated soil.</p> <p>26. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent material.</p> <p>27. If necessary, oil absorbent sheets or pads must be attached to leaky machinery or infrastructure.</p> <p>28. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use.</p> <p>29. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment, and stored in adequate containers until appropriate disposal.</p>	
Water Use and Quality	Water pollution	Water	Pitting and trenching phase- (construction and operation phase)	<p><b>Water Use</b></p> <ol style="list-style-type: none"> <li>1. Develop a sustainable water supply management plan to minimise the impact to natural systems by managing water use, avoiding depletion of aquifers and minimising impacts to water users.</li> <li>2. Water must be reused, recycled or treated where possible.</li> </ol>	

				<p><b>Water Quality</b></p> <ol style="list-style-type: none"> <li>3. The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines.</li> <li>4. Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone.</li> <li>5. Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities, workshops, fuel storage depots, and containment areas and spill kits should be available with emergency response plans.</li> </ol> <p><b>Stormwater</b></p> <ol style="list-style-type: none"> <li>6. The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants.</li> <li>7. Silt fences should be used to prevent any soil entering the stormwater drains.</li> </ol>	
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				<p>8. Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.</p> <p>9. Promote a water saving mind set with construction/ prospecting workers in order to Contractor ensure less water wastage.</p> <p>10. Hazardous substances must be stored at least 40m from any water bodies on site to avoid pollution.</p> <p>11. The installation of the stormwater system must take place as soon as possible to attenuate stormwater from the construction phase as well as the operation phase.</p> <p>12. Earth, stone and rubble is to be properly disposed of, or utilized on site so as not to obstruct natural water path ways over the site. i.e. these materials must not be placed in stormwater channels, drainage lines or rivers.</p> <p>13. There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed.</p> <p>The cut-off trenches and silt fences will be installed where necessary as to control runoff storm water by attenuating it and control the movement of sediment on the premises.</p>	
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				<p>These structures will be monitored on a regular basis. It is suggested that it be monitored on a weekly basis during the rainy season, and after possible rain events during the dry season.</p> <p>If these practices is found to be insufficient for the control of storm water and sedimentation, other alternatives should immediately be investigated and implemented.</p> <p><b>Groundwater resource protection</b></p> <p>14. Process solution storage ponds and other impoundments designed to hold non fresh water or non-treated process effluents should be lined and be equipped with sufficient wells to enable monitoring of water levels and quality.</p> <p><b>Sanitation</b></p> <p>15. Adequate sanitary facilities and ablutions must be provided for construction workers (1 toilet per every 15 workers).</p> <p>16. The facilities must be regularly serviced to reduce the risk of surface or groundwater pollution.</p> <p><b>Concrete mixing</b></p>	
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				<p>17. Concrete contaminated water must not enter soil or any natural drainage system as this disturbs the natural acidity of the soil and affects plant growth.</p> <p><b>Public areas</b></p> <p>18. Food preparation areas should be provided with adequate washing facilities and food refuse should be stored in sealed refuse bins which should be removed from site on a regular basis.</p> <p>19. The Contractor should take steps to ensure that littering by construction/ prospecting workers does not occur and persons should be employed on site to collect litter from the site and immediate surroundings, including litter accumulating at fence lines.</p> <p><b>20.</b> No washing or servicing of vehicles on site.</p>	
Water Use and Quality	Changes to the hydrological regime of the stream		Pitting and trenching phase- (construction and operation phase)	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>Any activities that take place within 32 meters of a wetland or watercourse or the 1:100 year flood lines will require authorisation in terms of the relevant regulations of NEMA, however as far as possible infrastructure should be placed outside of wetlands and / or buffer lines.</li> </ul>	

				<ul style="list-style-type: none"> <li>• No stockpiling should take place within a watercourse or the 32m buffer.</li> <li>• All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds</li> <li>• Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed stream banks;</li> <li>• Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities, particularly as the soils in the study area are prone to erosion;</li> <li>• All areas should be re-sloped and top-soiled where necessary and reseeded with indigenous grasses to stabilise the loose material;</li> <li>• Edge effects such as erosion must be strictly monitored and managed;</li> <li>• Sensitivity maps have been developed for the study area, indicating the drainage lines and riparian systems, and their relevant buffer zones. It is recommended that this sensitivity map be considered during all phases of the development and with special mentioning of the planning of infrastructure, in order to aid in the conservation of and minimise impact</li> </ul>	
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				<p>on the riparian and aquatic habitat and resources within the study area;</p> <ul style="list-style-type: none"> <li>• Rehabilitation must ensure that the wetland structure and function are reinstated in such a way as to ensure the ongoing functionality of the larger wetland systems at pre- prospecting levels.</li> <li>• Any areas where bank failure is observed, due to the prospecting or prospecting impacts, should be immediately repaired;</li> <li>• As far as possible the existing road network should be utilised, minimising the need to develop new access routes resulting in an increased impact on the local environment. Should temporary roads or access routes be necessary and unavoidable, proper planning must take place and the site sensitivity plan must be taken into consideration. If additional roads are required, then wherever feasible such roads should be constructed a distance from the more sensitive riparian areas and not directly adjacent thereto. If crossings are required they should cross the systems at right angles, as far as possible to minimise impacts in the receiving environment;</li> <li>• The duration of impacts on the riverine and drainage line systems should be minimised as far as possible by</li> </ul>	
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				<p>ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised;</p> <ul style="list-style-type: none"> <li>• Stabilisation of banks by employing one of the individual techniques below or a combination thereof, is essential, given the inherent susceptibility of the soils to erosion. Such measures include: <ul style="list-style-type: none"> <li>○ Re-sloping of banks to a maximum of a 1:3 slope;</li> <li>○ Revegetation of re-profiled slopes;</li> <li>○ Temporary stabilisation of slopes using geotextiles; and</li> <li>○ Installation of gabions and reno-mattresses.</li> <li>○ To prevent the further erosion of soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas particularly susceptible to erosion;</li> </ul> </li> <li>• Install erosion berms during construction to prevent gully formation: <ul style="list-style-type: none"> <li>○ Berms every 50m should be installed where any disturbed soils have a slope of less than 2%,</li> <li>○ Berms every 25m where the track slopes between 2% and 10%,</li> <li>○ Berms every 20m where the track slopes between 10% and 15% and</li> <li>○ Berms every 10m where the track slope is greater than 15%;</li> </ul> </li> </ul>	
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				<ul style="list-style-type: none"> <li>• Sheet runoff from access roads should be slowed down by the strategic placement of berms and sandbags;</li> <li>• All soils compacted as a result of construction activities falling outside of project areas should be ripped and profiled. Special attention should be paid to alien and invasive control within these areas. Alien and invasive vegetation control should take place throughout all construction and rehabilitation phases to prevent loss of floral habitat;</li> <li>• As far as possible, all rehabilitation activities should occur in the low flow season, during the drier winter months.</li> <li>• Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.</li> </ul>	
	Impact of changes to water quality		Pitting and trenching phase- (construction and operation phase)	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>• All vehicles must be regularly inspected for leaks. Re-fuelling must take place on a sealed surface area to prevent entry of hydrocarbons into topsoil;</li> <li>• All spills, should they occur, should be immediately cleaned up and treated accordingly.</li> </ul>	

				<ul style="list-style-type: none"> <li>• Chemicals used for prospecting, vehicle maintenance and construction must be stored safely on site but outside the 32m buffer and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early.</li> <li>• Littering and contamination of water sources during prospecting must be prevented by effective site management.</li> <li>• Emergency plans must be in place in case of spillages especially in the watercourse.</li> <li>• No stockpiling should take place within a watercourse.</li> <li>• All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>• Stockpiles must be located away from river channels.</li> <li>• Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed riverbanks.</li> <li>• The construction camp and necessary ablution facilities meant for construction workers must be</li> </ul>	
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				beyond the 32m buffer described previously.	
	Loss of riparian vegetation, aquatic habitat and stream continuity (migration corridors)		Pitting and trenching phase- (construction and operation phase)	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>• As far as possible, all rehabilitation activities should occur in the low flow season, during the drier winter months.</li> <li>• Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.</li> <li>• The duration of impacts on the riverine and drainage line systems should be minimised as far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised;</li> <li>• Rehabilitation must ensure that riparian structure and function are reinstated in such a way as to ensure the ongoing functionality of the larger riparian systems at pre- prospecting levels.</li> <li>• Stabilisation of banks by employing one of the individual techniques below or a combination thereof, is essential, given the inherent susceptibility of the soils to erosion. Such measures include: <ul style="list-style-type: none"> <li>○ Re-sloping of banks to a maximum of a 1:3 slope;</li> <li>○ Revegetation of re-profiled slopes;</li> <li>○ Temporary stabilisation of slopes using geotextiles; and</li> </ul> </li> </ul>	

				<ul style="list-style-type: none"> <li>○ Installation of gabions and reno-mattresses.</li> <li>○ To prevent the further erosion of soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas particularly susceptible to erosion;</li> <li>• Install erosion berms during construction to prevent gully formation: <ul style="list-style-type: none"> <li>○ Berms every 50m should be installed where any disturbed soils have a slope of less than 2%,</li> <li>○ Berms every 25m where the track slopes between 2% and 10%,</li> <li>○ Berms every 20m where the track slopes between 10% and 15% and</li> <li>○ Berms every 10m where the track slope is greater than 15%;</li> </ul> </li> </ul>	
	Spread of alien invasive species		Pitting and trenching phase-(construction and operation phase)	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>• Proliferation of alien and invasive species is expected within any disturbed areas particularly as there are some alien and invasive species within the study area at present. These species should be eradicated and controlled to prevent further spread beyond the study area;</li> <li>• It is suggested that an alien plant removal program be initialised within the study area in order to help reinstate more natural hydrological and ecological functions to within the project site;</li> </ul>	



				<ul style="list-style-type: none"> <li>• Alien plant seed dispersal within the top layers of the soil within footprint areas, that will have an impact on future rehabilitation, has to be controlled;</li> <li>• Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used;</li> <li>• Footprint areas should be kept as small as possible when removing alien plant species;</li> <li>• No vehicles should be allowed to drive through designated sensitive drainage lines and riparian areas during the eradication of alien and weed species.</li> <li>• All alien vegetation in the riparian zone should be removed upon completion of mining activities and reseeded with indigenous grasses as specified by a suitably qualified specialist (ecologist);</li> </ul>	
Vegetation Clearing for the prospecting purpose	Destruction of protected plant species		(construction and operation phase)	<ul style="list-style-type: none"> <li>• Supervision by an ecologist to ensure success of the rescue operation</li> <li>• Place drilling holes away from any red listed and/or protected plant species</li> <li>• Use already available farm roads to avoid trampling red listed plant species</li> </ul>	
± 2995 Ha <b>Drilling:</b> 20 x Percussion holes <b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.	Removal of the natural vegetation		(construction and operation phase)	<ul style="list-style-type: none"> <li>• Due to the sensitivity of the areas it is advised that areas designated for vegetation clearing should be identified</li> </ul>	

<b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.				and visibly marked off and also approved as part of final drilling map <ul style="list-style-type: none"> <li>• Vegetation clearing areas should be kept to a minimum and restricted to the proposed drilling sites.</li> <li>• Exposed areas should be rehabilitated with indigenous plants to the project area as soon as construction is finished.</li> </ul>	
	Disturbance to animals on site		(construction and operation phase)	<ul style="list-style-type: none"> <li>• Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees.</li> <li>• Dogs or other pets are not allowed to the worksite as they are threats to the natural wild animal</li> <li>• A low speed limit should be enforced on site to reduce wild animal-vehicle collisions</li> <li>• No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.</li> <li>• Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harms remaining faunal species.</li> <li>• Hunting weapons are prohibited on site.</li> <li>• Contract employees must be educated about the value of wild animals and the importance of their conservation.</li> </ul>	

				<ul style="list-style-type: none"> <li>• The ECO must conduct regular site inspections of removing any snares or traps that have been erected.</li> <li>• Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage.</li> <li>• Ensure that the colours used to paint the buildings including the roof are blending to the environment</li> </ul>	
	Increased soil erosion, increase in silt loads and sedimentation		(construction and operation phase)	<ul style="list-style-type: none"> <li>• Following prospecting, rehabilitation of disturbed areas is required.</li> <li>• Avoid areas with sensitive soils, steep slopes during rain or windy season.</li> <li>• Ensure that roads are not paved but well maintained (as gravel) to reduce the speed of water by promoting infiltration.</li> </ul>	
	Establishment and spread of declared weeds		(construction and operation phase)	<ul style="list-style-type: none"> <li>• The best mitigation measure for alien and invasive species is the early detection and eradication of these species which will be ensured with the use of a monitoring programme.</li> <li>• An alien invasive management programme should be developed and implemented in order to control alien invasive species</li> </ul>	
<p>Mitigation measures:</p> <p>Waste generation</p>	Pollution due to oil and fuel spills, erosion, and ablution facilities.		(construction and operation phase)	<ul style="list-style-type: none"> <li>• Proper ablution facilities on site must be provided.</li> <li>• Constant rehabilitation of erosion problems.</li> </ul>	

				<ul style="list-style-type: none"> <li>• Proper storage facilities of construction materials.</li> <li>• Waste management is very important. Proper storage and removal strategy must be in place.</li> <li>• Proper Standard Operating Procedures in place regulating refuelling and other potential polluting activities.</li> <li>• Must have rehabilitation strategy as part of EMP such as a clean-up plan/strategy if spills occur and proper facilities (ablution) to ensure no sewerage spills into drainage lines and streams.</li> </ul>	
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### 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).

<b>ACTIVITY</b> Whether listed or not listed.	<b>POTENTIAL IMPACT</b>	<b>MITIGATION TYPE</b>	<b>TIME PERIOD FOR IMPLEMENTATION</b>	<b>COMPLIANCE WITH STANDARDS</b>
<b>(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,</b>	<b>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater</b>	<b>(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.</b>	Describe the time period when the measures in the environmental management programme must be implemented when required.	(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 practices that have been

<b>roads, pipelines, power lines, conveyors, etc...etc...etc.).</b>	<b>contamination, air pollution etc....etc...)</b>	<ul style="list-style-type: none"> <li>• <b>Modify through alternative method.</b></li> <li>• <b>Control through noise control</b></li> <li>• <b>Control through management and monitoring</b></li> <li>• <b>Remedy through rehabilitation..</b></li> </ul>	<p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:-..</p> <p>Upon cessation of the individual activity or.</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond Mining as the case may be.</p>	identified by Competent Authorities)
<p>Clearance of vegetation</p> <p>± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p>	Loss or fragmentation of habitats	<p><b>Existing vegetation</b></p> <ol style="list-style-type: none"> <li>1. Vegetation removal must be limited to the prospecting site.</li> <li>2. Vegetation to be removed as it becomes necessary rather than removal of all vegetation throughout the site in one step.</li> <li>3. No vegetation to be used for firewood.</li> <li>4. Exotic and invasive plant species should not be allowed to establish, if the development is approved.</li> </ol> <p><b>Rehabilitation</b></p> <ol style="list-style-type: none"> <li>5. All damaged areas shall be rehabilitated upon completion of the contract.</li> <li>6. Re-vegetation of the disturbed site is aimed at approximating as near as possible the natural vegetative</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<p>conditions prevailing prior to construction.</p> <p>7. All natural areas impacted during construction/ prospecting must be rehabilitated with locally indigenous grasses typical of the representative botanical unit.</p> <p>8. Rehabilitation must take place in a phased approach as soon as possible.</p> <p>9. Rehabilitation process must make use of species indigenous to the area. Seeds from surrounding seed banks can be used for re-seeding.</p> <p>10. Rehabilitation must be executed in such a manner that surface run-off will not cause erosion of disturbed areas.</p> <p>11. Planting of indigenous tree species in areas not to be cultivated or built on must be encouraged.</p> <p><b>Demarcation of prospecting area</b></p> <p>12. All plants not interfering with prospecting operations shall be left undisturbed clearly marked and indicated on the site plan.</p> <p>13. The prospecting area must be well demarcated and no construction activities must be allowed outside of this demarcated footprint.</p> <p>14. Vegetation removal must be phased in order to reduce impact of construction/ prospecting.</p>		
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		<p>15. Site office and laydown areas must be clearly demarcated and no encroachment must occur beyond demarcated areas.</p> <p>16. Strict and regular auditing of the prospecting process to ensure containment of the prospecting and laydown areas.</p> <p>17. Soils must be kept free of petrochemical solutions that may be kept on site during construction/ prospecting. Spillage can result in a loss of soil functionality thus limiting the re-establishment of flora.</p> <p><b>Utilisation of resources</b></p> <p>18. Gathering of firewood, fruit, muti plants, or any other natural material onsite or in areas adjacent to the site is prohibited unless with prior approval of the ECO.</p> <p><b>Exotic vegetation</b></p> <p>19. Alien vegetation on the site will need to be controlled.</p> <p>20. The Contractor should be responsible for implementing a programme of weed control (particularly in areas where soil has been disturbed); and grassing of any remaining stockpiles to prevent weed invasion.</p>		
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		<p>21. The spread of exotic species occurring throughout the site should be controlled.</p> <p><b>Herbicides</b></p> <p>22. Herbicide use shall only be allowed according to contract specifications. The application shall be according to set specifications and under supervision of a qualified technician. The possibility of leaching into the surrounding environment shall be properly investigated and only environmentally friendly herbicides shall be used.</p> <p>23. The use of pesticides and herbicides on the site must be discouraged as these impact on important pollinator species of indigenous vegetation.</p> <p><b>Fauna</b></p> <p>24. Rehabilitation to be undertaken as soon as possible after prospecting has been completed.</p> <p>25. No trapping or snaring to fauna on the construction/ prospecting site should be allowed.</p> <p>26. No faunal species must be disturbed, trapped, hunted or killed by maintenance staff during any routine maintenance at the development.</p>		
Prospecting of activities – excavations	Loss of topsoil	1. The Contractor should, prior to the commencement of earthworks	Duration of operation	The implementation of the recommended mitigation



<p>± 2995 Ha</p> <p><b>Drilling:</b> 20 x Percussion holes</p> <p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p>		<p>determine the average depth of topsoil and agree on this with the ECO. The full depth of topsoil should be stripped from areas affected by construction/prospecting and related activities prior to the commencement of major earthworks. This should include the building footprints, working areas and storage areas. Topsoil must be reused where possible to rehabilitate disturbed areas.</p> <ol style="list-style-type: none"> <li>2. Care must be taken not to mix topsoil and subsoil during stripping.</li> <li>3. The topsoil must be conserved on site in and around the pit/trench area.</li> <li>4. Subsoil and overburden in the prospecting area should be stockpiled separately to be returned for backfilling in the correct soil horizon order.</li> <li>5. If stockpiles are exposed to windy conditions or heavy rain, they should be covered either by vegetation or geofabric, depending on the duration of the project. Stockpiles may further be protected by the construction of berms or low brick walls around their bases.</li> <li>6. Stockpiles should be kept clear of weeds and alien vegetation growth by regular weeding.</li> <li>7. Where contamination of soil is expected, analysis must be done prior to disposal of soil to determine the appropriate disposal route. Proof from</li> </ol>		<p>measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.</p>
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		<p>an approved waste disposal site where contaminated soils are dumped if and when a spillage/leakage occurs should be attained and given to the project manager.</p> <p>Establish an effective record keeping system for each area where soil is disturbed for prospecting purposes. These records should be included in environmental performance reports and should include all the records below.</p> <ul style="list-style-type: none"> <li>• Record the GPS coordinates of each area.</li> <li>• Record the date of topsoil stripping.</li> <li>• Record the GPS coordinates of where the topsoil is stockpiled.</li> <li>• Record the date of cessation prospecting activities at the particular site.</li> <li>• Photograph the area on cessation of prospecting activities.</li> <li>• Record date and depth of re-spreading of topsoil.</li> <li>• Photograph the area on completion of rehabilitation and on an annual basis thereafter to show vegetation establishment and evaluate progress of restoration over time.</li> </ul>		
	Erosion	1. An effective system of run-off control should be implemented, where it is required, that collects and safely disseminates run-off water from all	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to

		<p>hardened surfaces and prevents potential down slope erosion.</p> <ol style="list-style-type: none"> <li>2. Periodical site inspection should be included in environmental performance reporting that inspects the effectiveness of the run-off control system and specifically records the occurrence of any erosion on site or downstream.</li> <li>3. Wind screening and stormwater control should be undertaken to prevent soil loss from the site.</li> <li>4. The use of silt fences and sandbags must be implemented in areas that are susceptible to erosion.</li> <li>5. Other erosion control measures that can be implemented are as follows: <ul style="list-style-type: none"> <li>o Brush packing with cleared vegetation</li> <li>o Mulch or chip packing</li> <li>o Planting of vegetation</li> <li>o Hydroseeding/hand sowing</li> </ul> </li> <li>6. Sensitive areas need to be identified prior to construction/prospecting so that the necessary precautions can be implemented.</li> <li>7. All erosion control mechanisms need to be regularly maintained.</li> <li>8. Seeding of topsoil and subsoil stockpiles to prevent wind and water erosion of soil surfaces.</li> <li>9. Retention of vegetation where possible to avoid soil erosion.</li> </ol>		<p>acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.</p>
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		<p>10. Vegetation clearance should be phased to ensure that the minimum area of soil is exposed to potential erosion at any one time.</p> <p>11. Re-vegetation of disturbed surfaces should occur immediately after construction/ prospecting activities are completed. This should be done through seeding with indigenous grasses.</p> <p>12. No impediment to the natural water flow other than approved erosion control works is permitted.</p> <p>13. To prevent stormwater damage, the increase in stormwater run-off resulting from construction/ prospecting activities must be estimated and the drainage system assessed accordingly. A drainage plan must be submitted to the Engineer for approval and must include the location and design criteria of any temporary stream crossings.</p> <p>14. Stockpiles not used in three (3) months after stripping must be seeded/backfilled to prevent dust and erosion.</p>		
	Air Pollution	<p><b>Dust control</b></p> <p>14. Wheel washing and damping down of un-surfaced and un-vegetated areas.</p> <p>15. Retention of vegetation where possible will reduce dust travel.</p>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring

		<p>16. Clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.</p> <p>17. Damping down of all exposed soil surfaces with a water bowser or sprinklers when necessary to reduce dust.</p> <p>18. The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring communities.</p> <p>19. A speed limit of 30km/h must not be exceeded on site.</p> <p>20. Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.</p> <p>21. Any dirt roads that are utilised by the workers must be regularly maintained to ensure that dust levels are controlled.</p> <p><b>Odour control</b></p> <p>22. Regular servicing of vehicles in order to limit gaseous emissions.</p> <p>23. Regular servicing of onsite toilets to avoid potential odours.</p> <p><b>Rehabilitation</b></p> <p>24. The Contractor should commence rehabilitation of exposed soil surfaces</p>		compliance with NEMA and Duty of Care as prescribed by NEMA.
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		<p>as soon as practical after completion of earthworks.</p> <p><b>Fire prevention</b></p> <p>25. No open fires shall be allowed on site under any circumstance. All cooking shall be done in demarcated areas that are safe and cannot cause runaway fires.</p> <p>26. The Contractor shall 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.</p>		
	Noise	<ol style="list-style-type: none"> <li>1. The prospecting activities must aim to adhere to the relevant noise regulations and limit noise to within standard working hours in order to reduce disturbance of dwellings in close proximity to the development.</li> <li>2. Pans, power plants, crushers, workshops and other noisy fixed facilities should be located well away from noise sensitive areas. Once the proposed final layouts are made available by the Contractor(s), the sites must be evaluated in detail and specific measures designed in to the system.</li> <li>3. Truck traffic should be routed away from noise sensitive areas, where possible.</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.

		<ol style="list-style-type: none"> <li>4. Noise levels must be kept within acceptable limits.</li> <li>5. Noisy operations should be combined so that they occur where possible at the same time.</li> <li>6. Mine workers to wear necessary ear protection gear.</li> <li>7. Noisy activities to take place during allocated hours.</li> <li>8. Noise from labourers must be controlled.</li> <li>9. Noise suppression measures must be applied to all equipment. Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Should the vehicles or equipment not be in good working order, the Contractor may be instructed to remove the offending vehicle or machinery from the site.</li> <li>10. The Contractor must take measures to discourage labourers from loitering in the area and causing noise disturbance. Where possible labour shall be transported to and from the site by the Contractor or his Sub-Contractors by the Contractors own transport.</li> <li>11. Implementation of enclosure and cladding of processing plants.</li> <li>12. Applying regular and thorough maintenance schedules to equipment</li> </ol>		
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		and processes. An increase in noise emission levels very often is a sign of the imminent mechanical failure of a machine.		
	Impact on potential cultural and heritage artefacts	<ol style="list-style-type: none"> <li>1. Any finds must be reported to the nearest National Monuments office to comply with the National Heritage Resources Act (Act No 25 of 1999) and to DEA.</li> <li>2. Local museums as well as the South African Heritage Resource Agency (SAHRA) should be informed if any artefacts are uncovered in the affected area.</li> <li>3. 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.</li> <li>4. Any discovered artefacts shall 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. Permits shall be obtained from the SAHRA should the proposed site affect any world heritage sites or if any heritage sites are to be destroyed or altered.</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards, thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.
Waste Management		<b>Litter management</b> <ol style="list-style-type: none"> <li>1. Refuse bins must be placed at strategic positions to ensure that litter does not accumulate within the construction/ prospecting site.</li> </ol>	Duration of operation	The implementation of the recommended mitigation measures will result in the minimisation of impacts to acceptable standards,



		<ol style="list-style-type: none"> <li>2. The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at registered/licensed landfill.</li> <li>3. Good housekeeping practices should be implemented to regularly maintain the litter and rubble situation on the construction/prospecting site.</li> <li>4. If possible and feasible, all waste generated on site must be separated into glass, plastic, paper, metal and wood and recycled. An independent contractor can be appointed to conduct this recycling.</li> <li>5. Littering by the employees of the Contractor shall not be allowed under any circumstances. The ECO shall monitor the neatness of the work sites as well as the Contractor campsite.</li> <li>6. Skip waste containers should be maintained on site. These should be kept covered and arrangements made for them to be collected regularly.</li> <li>7. All waste must be removed from the site and transported to a landfill site promptly to ensure that it does not attract vermin or produce odours.</li> <li>8. Where a registered waste site is not available close to the construction/prospecting site, the Contractor shall provide a method</li> </ol>		thereby ensuring compliance with NEMA and Duty of Care as prescribed by NEMA.
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		<p>statement with regard to waste management.</p> <p>9. A certificate of disposal shall be obtained by the Contractor and kept on file, if relevant.</p> <p>10. Under no circumstances may solid waste be burnt on site.</p> <p>11. All waste must be removed promptly to ensure that it does not attract vermin or produce odours.</p> <p><b>Hazardous waste</b></p> <p>12. All waste hazardous materials must be carefully stored as advised by the ECO, and then disposed of offsite at a licensed landfill site, where practical. Incineration may be used where relevant.</p> <p>13. Contaminants to be stored safely to avoid spillage.</p> <p>14. Machinery must be properly maintained to keep oil leaks in check.</p> <p>15. All necessary precaution measures shall be taken to prevent soil or surface water pollution from hazardous materials used during construction/prospecting and any spills shall immediately be cleaned up and all affected areas rehabilitated.</p> <p><b>Sanitation</b></p> <p>16. The Contractor shall install mobile chemical toilets on the site.</p>		
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		<p>17. Staff shall be sensitized to the fact that they should use these facilities at all times. No indiscriminate sanitary activities on site shall be allowed.</p> <p>18. Toilets shall be serviced regularly and the ECO shall inspect toilets regularly.</p> <p>19. Toilets should be no closer than 50m or above the 1:100 year flood line from any natural or manmade water bodies or drainage lines or alternatively located in a place approved of by the Engineer.</p> <p>20. Under no circumstances may open areas, neighbours fences or the surrounding bush be used as a toilet facility.</p> <p>21. The construction of “Long Drop” toilets is forbidden, but rather toilets connected to the sewage treatment plant and French drain systems may be investigated.</p> <p>22. Potable water must be provided for all construction staff.</p> <p><b>Remedial actions</b></p> <p>23. Depending on the nature and extent of the spill, contaminated soil must be either excavated or treated on-site.</p> <p>24. Excavation of contaminated soil must involve careful removal of soil using appropriate tools/machinery to storage containers until treated or disposed of at a licensed hazardous landfill site.</p>		
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		<p>25. The ECO must determine the precise method of treatment for polluted soil. This could involve the application of soil absorbent materials as well as oil-digestive powders to the contaminated soil.</p> <p>26. If a spill occurs on an impermeable surface such as cement or concrete, the surface spill must be contained using oil absorbent material.</p> <p>27. If necessary, oil absorbent sheets or pads must be attached to leaky machinery or infrastructure.</p> <p>28. Materials used for the remediation of petrochemical spills must be used according to product specifications and guidance for use.</p> <p>29. Contaminated remediation materials must be carefully removed from the area of the spill so as to prevent further release of petrochemicals to the environment and stored in adequate containers until appropriate disposal.</p>		
Water Use and Quality	Water pollution	<p><b>Water Use</b></p> <p>1. Develop a sustainable water supply management plan to minimize the impact to natural systems by managing water use, avoiding depletion of aquifers and minimizing impacts to water users.</p> <p>2) Water must be reused, recycled or treated where possible.</p> <p><b>Water Quality</b></p>		

		<p>3) The quality and quantity of effluent streams discharged to the environment including stormwater should be managed and treated to meet applicable effluent discharge guidelines.</p> <p>4) Discharge to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria outside a scientifically established mixing zone.</p> <p>5) Efficient oil and grease traps or sumps should be installed and maintained at refueling facilities, workshops, fuel storage depots, and containment areas and spill kits should be available with emergency response plans.</p> <p><b>Stormwater</b></p> <p>6) The site must be managed in order to prevent pollution of drains, downstream watercourses or groundwater, due to suspended solids and silt or chemical pollutants.</p> <p>7) Silt fences should be used to prevent any soil entering the stormwater drains.</p> <p>8) Temporary cut off drains and berms may be required to capture stormwater and promote infiltration.</p> <p>9) Promote a water saving mind set with construction/prospecting workers in order to Contractor ensure less water wastage.</p> <p>10) New stormwater construction must be developed strictly according to</p>		
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		<p>specifications from engineers in order to ensure efficiency.</p> <p>11) Hazardous substances must be stored at least 20m from any water bodies on site to avoid pollution.</p> <p>12) The installation of the stormwater system must take place as soon as possible to attenuate stormwater from the construction phase as well as the operation phase.</p> <p>13) Earth, stone and rubble is to be properly disposed of, or utilized on site so as not to obstruct natural water path ways over the site. i.e. these materials must not be placed in stormwater channels, drainage lines or rivers.</p> <p>14) There should be a periodic checking of the site's drainage system to ensure that the water flow is unobstructed.</p> <p><b>Groundwater resource protection</b></p> <p>15) Process solution storage ponds and other impoundments designed to hold non fresh water or un-treated process effluents should be lined and be equipped with sufficient wells to enable monitoring of water levels and quality.</p> <p><b>Sanitation</b></p> <p>16) Adequate sanitary facilities and ablutions must be provided for construction workers (1 toilet per every 15 workers).</p>		
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		<p>17) The facilities must be regularly serviced to reduce the risk of surface or groundwater pollution.</p> <p><b>Concrete mixing</b></p> <p>18) Concrete contaminated water must not enter soil or any natural drainage system as this disturbs the natural acidity of the soil and affects plant growth.</p> <p><b>Public areas</b></p> <p>19) Food preparation areas should be provided with adequate washing facilities and food refuse should be stored in sealed refuse bins which should be removed from site on a regular basis.</p> <p>20) The Contractor should take steps to ensure that littering by construction workers does not occur and persons should be employed on site to collect litter from the site and immediate surroundings, including litter accumulating at fence lines.</p> <p>21) No washing or servicing of vehicles on site.</p>		
Water Use and Quality	Changes to the hydrological regime of the stream	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>Any activities that take place within 32 meters of a wetland or watercourse or the 1:100-year flood lines will require authorisation in terms of the relevant regulations of NEMA, however as far as possible infrastructure should be placed outside of wetlands and / or buffer lines.</li> <li>No stockpiling should take place within a watercourse or the 32m buffer.</li> </ul>		

		<ul style="list-style-type: none"> <li>• All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>• Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed stream banks;</li> <li>• Ensure that erosion management and sediment controls are strictly implemented from the beginning of site clearing activities, particularly as the soils in the study area are prone to erosion;</li> <li>• All areas should be re-sloped and top-soiled where necessary and reseeded with indigenous grasses to stabilise the loose material;</li> <li>• Edge effects such as erosion must be strictly monitored and managed;</li> <li>• Sensitivity maps have been developed for the study area, indicating the drainage lines and riparian systems, and their relevant buffer zones. It is recommended that this sensitivity map be considered during all phases of the development and with special mentioning of the planning of infrastructure, in order to aid in the conservation of and minimise impact on the riparian and aquatic habitat and resources within the study area;</li> <li>• Rehabilitation must ensure that the wetland structure and function are</li> </ul>		
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		<p>reinstated in such a way as to ensure the ongoing functionality of the larger wetland systems at pre- prospecting levels.</p> <ul style="list-style-type: none"> <li>• Any areas where bank failure is observed, due to the prospecting impacts, should be immediately repaired;</li> <li>• As far as possible the existing road network should be utilised, minimising the need to develop new access routes resulting in an increased impact on the local environment. Should temporary roads or access routes be necessary and unavoidable, proper planning must take place and the site sensitivity plan must be taken into consideration. If additional roads are required, then wherever feasible such roads should be constructed a distance from the more sensitive riparian areas and not directly adjacent thereto. If crossings are required they should cross the systems at right angles, as far as possible to minimise impacts in the receiving environment;</li> <li>• The duration of impacts on the riverine and drainage line systems should be minimised as far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised;</li> <li>• Stabilisation of banks by employing one of the individual techniques below or a combination thereof, is essential, given the</li> </ul>		
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		<p>inherent susceptibility of the soils to erosion. Such measures include:</p> <ul style="list-style-type: none"> <li>○ Re-sloping of banks to a maximum of a 1:3 slope;</li> <li>○ Revegetation of re-profiled slopes;</li> <li>○ Temporary stabilisation of slopes using geotextiles; and</li> <li>○ Installation of gabions and reno-mattresses.</li> <li>○ To prevent the further erosion of soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas particularly susceptible to erosion;</li> <li>● Install erosion berms during construction to prevent gully formation: <ul style="list-style-type: none"> <li>○ Berms every 50m should be installed where any disturbed soils have a slope of less than 2%,</li> <li>○ Berms every 25m where the track slopes between 2% and 10%,</li> <li>○ Berms every 20m where the track slopes between 10% and 15% and</li> <li>○ Berms every 10m where the track slope is greater than 15%;</li> </ul> </li> <li>● Sheet runoff from access roads should be slowed down by the strategic placement of berms and sandbags;</li> <li>● All soils compacted as a result of construction activities falling outside of project areas should be ripped and profiled. Special attention should be paid to alien and invasive control within these areas.</li> </ul>		
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		<p>Alien and invasive vegetation control should take place throughout all construction and rehabilitation phases to prevent loss of floral habitat;</p> <ul style="list-style-type: none"> <li>• As far as possible, all rehabilitation activities should occur in the low flow season, during the drier winter months.</li> <li>• Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.</li> </ul>		
	Impact of changes to water quality	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>• All vehicles must be regularly inspected for leaks. Re-fuelling must take place on a sealed surface area to prevent entry of hydrocarbons into topsoil;</li> <li>• All spills, should they occur, should be immediately cleaned up and treated accordingly.</li> <li>• Chemicals used for prospecting, vehicle maintenance and construction must be stored safely on site but outside the 32m buffer and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early.</li> <li>• Littering and contamination of water sources during prospecting must be prevented by effective site management.</li> </ul>		

		<ul style="list-style-type: none"> <li>• Emergency plans must be in place in case of spillages especially in the watercourse.</li> <li>• No stockpiling should take place within a watercourse.</li> <li>• All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds.</li> <li>• Stockpiles must be located away from river channels.</li> <li>• Erosion and sedimentation into channels must be minimised through the effective stabilisation (gabions and Reno mattresses) and the re-vegetation of any disturbed riverbanks.</li> <li>• The construction camp and necessary ablution facilities meant for construction workers must be beyond the 32m buffer described previously.</li> </ul>		
	Loss of riparian vegetation, aquatic habitat and stream continuity (migration corridors)	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>• As far as possible, all rehabilitation activities should occur in the low flow season, during the drier winter months.</li> <li>• Trenches and deep excavations should not be left open for extended periods of time as fauna may fall in and become trapped in them. Trenches which are exposed should contain soil ramps allowing fauna to escape the trench.</li> <li>• The duration of impacts on the riverine and drainage line systems should be minimised</li> </ul>		

		<p>as far as possible by ensuring that the duration of time in which flow alteration and sedimentation will take place is minimised;</p> <ul style="list-style-type: none"> <li>• Rehabilitation must ensure that riparian structure and function are reinstated in such a way as to ensure the ongoing functionality of the larger riparian systems at pre- prospecting levels.</li> <li>• Stabilisation of banks by employing one of the individual techniques below or a combination thereof, is essential, given the inherent susceptibility of the soils to erosion. Such measures include: <ul style="list-style-type: none"> <li>○ Re-sloping of banks to a maximum of a 1:3 slope;</li> <li>○ Revegetation of re-profiled slopes;</li> <li>○ Temporary stabilisation of slopes using geotextiles; and</li> <li>○ Installation of gabions and reno-mattresses.</li> <li>○ To prevent the further erosion of soils, management measures may include berms, soil traps, hessian curtains and storm water diversion away from areas particularly susceptible to erosion;</li> </ul> </li> <li>• Install erosion berms during construction to prevent gully formation: <ul style="list-style-type: none"> <li>○ Berms every 50m should be installed where any disturbed soils have a slope of less than 2%,</li> <li>○ Berms every 25m where the track slopes between 2% and 10%,</li> </ul> </li> </ul>		
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		<ul style="list-style-type: none"> <li>○ Berms every 20m where the track slopes between 10% and 15% and</li> <li>○ Berms every 10m where the track slope is greater than 15%;</li> </ul>		
	Spread of alien invasive species	<p><b>Proposed mitigation</b></p> <ul style="list-style-type: none"> <li>• Proliferation of alien and invasive species is expected within any disturbed areas particularly as there are some alien and invasive species within the study area at present. These species should be eradicated and controlled to prevent further spread beyond the study area;</li> <li>• It is suggested that an alien plant removal program be initialised within the study area in order to help reinstate more natural hydrological and ecological functions to within the project site;</li> <li>• Alien plant seed dispersal within the top layers of the soil within footprint areas, that will have an impact on future rehabilitation, has to be controlled;</li> <li>• Care should be taken with the choice of herbicide to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicide used;</li> <li>• Footprint areas should be kept as small as possible when removing alien plant species;</li> <li>• No vehicles should be allowed to drive through designated sensitive drainage lines and riparian areas during the eradication of alien and weed species.</li> </ul>		

		<ul style="list-style-type: none"> <li>All alien vegetation in the riparian zone should be removed upon completion of prospecting activities and reseeded with indigenous grasses as specified by a suitably qualified specialist (ecologist);</li> </ul>		
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**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**

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
Clearance of vegetation	Loss or fragmentation of habitats	<ul style="list-style-type: none"> <li>Conduct regular internal audits.</li> <li>Conduct regular external audits</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Manager</li> <li>Suitable qualified environmental auditor</li> </ul>	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Prospecting – excavations ± 2995 Ha <b>Drilling:</b> 20 x Percussion holes	Loss of topsoil Erosion Air Pollution Noise	<ul style="list-style-type: none"> <li>Conduct regular internal audits.</li> <li>Conduct regular external audits</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Manager</li> <li>Suitable qualified environmental auditor</li> </ul>	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be

<p><b>Pits:</b> 30 x pits with dimensions of 3m (length) x 2m (wide) x 3m (depth) each.</p> <p><b>Trenches:</b> 20 trenches with dimensions of 20m (length) x 3m (wide) x 10m (depth) each.</p>	Impact on potential cultural and heritage artefacts			made available to the competent authority if required.
Waste management	Pollution	<ul style="list-style-type: none"> <li>• Conduct regular internal audits</li> <li>• Conduct regular external audits</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Manager</li> <li>• Suitable qualified environmental auditor</li> </ul>	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.
Water Use and Quality	Water pollution	<ul style="list-style-type: none"> <li>• Conduct regular internal audits.</li> <li>• Conduct regular external audits</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Manager</li> <li>• Suitable qualified environmental auditor</li> </ul>	Monitoring should be undertaken for duration of operations. Internal audits should be undertaken at least every 6 months. External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the competent authority if required.



**K. A PROGRAM FOR REPORTING ON COMPLIANCE, TAKING INTO ACCOUNT THE REQUIREMENTS AS BY THE REGULATIONS.**

External audits should be undertaken by a suitably qualified auditor on an annual basis. Reports should be made available to the Competent Authority if required.

**L. AN ENVIRONMENTAL AWARENESS PLAN DESCRIBING THE MANNER IN WHICH—**

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

**Elite International Logistics (Pty) Ltd** will implement an Environmental Awareness Plan which will include various mechanisms for informing employees of environmental risks resulting from their work, including:

- Induction training for full -time staff and contractors;
- In-house training sessions to be held with relevant employees;
- On the job training regarding environmental issues
- Training and skills development

The above measures will be implemented through an Environmental Communication Strategy to be implemented.

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

**Elite International Logistics (Pty) Ltd** will implement an incident reporting and reporting procedure in order to identify risks timeously and implement actions to avoid or minimise environmental impacts.

**M. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY  
(Among others, confirm that the financial provision will be reviewed annually).**

No specific information requirements have been detailed by the Competent Authority.

\*\*\*\*\***END OF THE REPORT**\*\*\*\*\*