KIMBERLEY QUARRY
PORTION 39 OF THE FARM SPIJT FONTEIN NO 122
SOL PLAATJE MUNICIPAL AREA
NORTHERN CAPE PROVINCE

ENVIRONMENTAL MANAGEMENT PROGRAMME

AUGUST 2025

DMRE REFERENCE NUMBER	**NC 30/5/1/2/2/0287 MR**
DOCUMENT VERSION	**Revision 01**

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EXECUTIVE SUMMARY

OMV Kimberley Mining (Pty) Ltd holds a mining right (DMRE Ref No: NC 30/5/1/2/2/0287 MR) to mine aggregate (dolerite), gravel, sand (manufactured) from hard rock and stone aggregate gravel over 370.2447 ha of Portion 39 of the farm Spijt Fontein No 122, located in the Sol Plaatje Municipality of the Northern Cape. The Mining Right remains valid until 06 July 2046, with the possibility of renewal.

The 2025 environmental performance audit concluded that the 2011 environmental management programme (EMPR) of Kimberley Quarry does not fully comply with Appendix 4 of the EIA Regulations (GNR 982 of 2014) (as amended). The Quarry has since made various changes and/or improvements on site, and management identified the need to amend/update the EMPR to adequately manage and/or mitigate the environmental impacts associated with the activity as well as ensure legal compliance.

This 2025 Amended EMPR will replace the 2011 EMPR upon approval by the Department of Mineral Resources and Energy (DMRE) and will serve as the guiding document for all environmental management aspects of the mine. The competent authority will evaluate the amended EMPR in terms of Regulation 35 of GNR 982, ensuring it provides sufficient measures for the avoidance, mitigation, and management of environmental impacts while allowing for continued compliance with legal requirements and industry best practices.

OMV Kimberley Mining (Pty) Ltd remains committed to sustainable mining practices, environmental stewardship, and responsible resource extraction that balances economic development with environmental protection and community well-being.

LIST OF ABBREVIATIONS

ASTM	American Standard Test Method
BGIS	Biodiversity GIS
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
DAEARDLR	Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
DMRE	Department of Mineral and Resources and Energy
DRPW	Department of Roads and Public Works
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECO	Environmental Control Officer
EIA Regulations	Environmental Impact Assessment Regulations, 2014 (as amended)
EMPR	Environmental Management Programme
EPA	Environmental Performance Assessment
GNR	Government Notice
GPS	Global Positioning System
HSA	Hazardous Substances Act, 1973 (Act No. 15 of 1973)
I&AP's	Interested and Affected Parties
IUCN	International Union of Conservation of Nature
MHSA	Mine Health and Safety Act, 1996 (Act No 29 of 1996)
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MR	Mining Right
MR Holder	OMV Kimberley Mining (Pty) Ltd
NCR	Noise Control Regulations, 1992
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NRTA	National Road Traffic Act, 1996 (Act No. 93 of 1996)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
OHSAS	Occupational Health and Safety Management Systems

PCB's	Polychlorinated Biphenyl
PCO	Pest Control Officer
PHRA-NC	Provincial Heritage Resources Agency – Northern Cape
PPE	Personal Protective Equipment
RoM	Run of Mine
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SDS	Safety Data Sheet
SLP	Social and Labour Plan
SPLM	Sol Plaatje Local Municipality
SWMP	Stormwater Management Plan
TMM's	Trackless Mobile Machinery
VU	Vulnerable
WMA	Water Management Area

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mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR AUTHORIZATION IN TERMS OF THE NATIONAL ENVIRONMENTAL ACT, 1998 IN RESPECT OF ACTIVITIES THAT HAVE TRIGGERED APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT:	OMV Kimberley Mining (Pty) Ltd
TEL NO:	053 807 2012
FAX NO:	-
POSTAL ADDRESS:	P.O. Box 47,The Reeds, 0061
PHYSICAL ADDRESS:	Farm Spijt Fontein No 122, Kimberley
FILE REFERENCE NUMBER:	NC 30/5/1/2/2/0287 MR

A. INTRODUCTION

OMV Kimberley Mining (Pty) Ltd holds a mining right (NC 30/5/1/2/2/0287 MR) to mine aggregate (dolerite), gravel, sand (manufactured) from hard rock and stone aggregate gravel over 370.2447 ha of Portion 39 of the farm Spijt Fontein No 122, located in the Sol Plaatje Municipality of the Northern Cape. The Mining Right (MR) remains valid until 06 July 2046, with the possibility of renewal.

The 2025 environmental performance audit concluded that the 2011 environmental management programme (EMPR) of Kimberley Quarry does not fully comply with Appendix 4 of GNR 982. The Quarry has since made various changes and/or improvements on site, and management identified the need to amend/update the EMPR to adequately manage and/or mitigate the environmental impacts associated with the activity as well as ensure compliance with the requirements of Appendix 4 of GNR 982 (as amended).

Accordingly, this document serves as the amended EMPR (version 01) for Kimberley Quarry, submitted to the DMRE in compliance with Section 35 of the EIA Regulations, 2014 (as amended). As per regulation 35: "*The competent authority must consider the environmental audit report and amended EMPr and, where applicable the amended closure plan, contemplated in regulation 34 and approve such amended EMPr, and where applicable the amended closure plan, if it is satisfied that it sufficiently provides for avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity, or where applicable the closure of the facility, and that it has been subjected to an appropriate public participation process*."

Should the DMRE approve this document (hereafter referred to as the "2025 EMPR"), this EMPR will replace the previously approved 2011 EMPR of the Quarry and will be applicable to all aspects of the mining activity throughout the operational- and decommissioning phases.

(GNR 982 APPENDIX 4 SECTION 1(1)(a))

B. DECLARATION OF INDEPENDENCE BY EAP

In terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) the proponent must appoint an independent Environmental Assessment Practitioner (EAP) to undertake any activities regulated in terms of the Act. OMV Kimberley Mining (Pty) Ltd (hereafter referred to as the "MR Holder") appointed Greenmined Environmental (Pty) Ltd (hereafter referred to as "Greenmined") to undertake the amendment of the mine's EMPR. Greenmined has no vested interest in OMV Kimberley Mining (Pty) Ltd or the mining project and declares its independence as required by the Environmental Impact Assessment Regulations, 2014 (as amended) (EIA Regulations).

a) DETAILS OF THE EAP

Name of the Practitioner: Ms Christine Fouché (Senior Environmental Specialist)
Tel No.: 021 851 2673
Cell No: 082 811 8514
E-mail address: christine.f@greenmined.co.za

b) EXPERTISE OF THE EAP

Ms. Fouché has a Diploma in Nature Conservation and a B.Sc. in Botany and Zoology. Full cirriculum vitae with evidence is attached as Appendix H.

Ms Fouché has twenty years' experience in doing Environmental Impact Assessments related projects in South Africa. Ms. Fouche is a registered Environmental Assessment Practitioner (registration no: 2019/1003) with EAPASA (Environmental Assessment Practitioners Association of South Africa). See a list of past projects attached as Appendix H.

(GNR 982 APPENDIX 4 SECTION 1(1)(b))

C. DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

a) LOCATION OF THE ACTIVITY

Table 1: Location of the activity.

Farm Name	Portion 39 of the farm Spijt Fontein No 122		
Mining Area (Ha)	370.2447 ha		
Magisterial District	Frances Baard District Municipality		
Distance and direction from the nearest town	Kimberley Quarry is located ±8.6km to the south of Kimberley, adjacent to the N12 travelling to Hopetown. The mine is situated on Portion 39 of the farm Spijt Fontein 122.		
21 digit Surveyor General Code for each farm portion	C03700000000012200039		
Site Coordinates	A	28˚ 47' 47.8228"	24˚ 43' 04.7899"
	B	28˚ 47' 55.5456"	24˚ 43' 25.1067"
	C	28˚ 49' 08.1869"	24˚ 43' 22.6779"
	D	28˚ 49' 51.7039"	24˚ 43' 05.5699"
	E	28˚ 49' 49.2784"	24˚ 42' 23.7178"

	F	28˚ 49’ 47.2737”	24˚ 42’ 24.3881”
	G	28˚ 49’ 10.0219”	24˚ 42’ 36.7710”
	H	28˚ 49’ 10.1333”	24˚ 42’ 37.2280”
	J	28˚ 49’ 02.1682”	24˚ 42’ 39.8774”
	g	28˚ 48’ 56.0083”	24˚ 42’ 43.4539”
	f	28˚ 48’ 52.8592”	24˚ 42’ 46.2076”
	e	28˚ 48’ 52.4233”	24˚ 42’ 45.6062”
	d	28˚ 48’ 52.0560”	24˚ 42’ 45.0719”
	c	28˚ 48’ 51.3163”	24˚ 42’ 44.0114”
	h	28˚ 48’ 52.2173”	24˚ 42’ 43.2223”
	K	28˚ 48’ 51.2237”	24˚ 42’ 43.5562”
	L	28˚ 48’ 51.0897”	24˚ 42’ 43.0204”
	M	28˚ 47’ 52.8938”	24˚ 43’ 02.3234”

b) DESCRIPTION OF THE MINING ACTIVITIES

1. PROJECT DESCRIPTION – OPERATIONAL PHASE

Kimberley Quarry is an opencast mine, where dolerite is mined. The 2011 EMPR notes that the quarry operations have been ongoing for the past 40 years (±54 years by 2025), and the stone crushing operation has been in existence for approximately 30 years.

The Quarry periodically operates 24-hours, 7-days a week especially when material is needed for road related projects. Blasting is permitted only between 08:00 and 17:00, Mondays to Saturdays, and is not allowed on Sundays and public holidays. The day time shift entails the following main activities:

- Drilling and blasting;
- Excavations, loading and hauling material to the processing plant;
- Crushing, screening and stockpiling of material;
- Dispatch; and
- Maintenance and cleaning of the plant.

During the night shift activities are limited to the following:

- Drilling;

- Excavations, loading and hauling of material to the processing plant;
- Crushing, screening and stockpiling of material; and
- Maintenance of the plant.

Historically a Brick and Block-making yard (Blockpave), Ready-mix Plant (OMV) and Asphalt Plant (National Asphalt) were established within the footprint of the mining area. Currently, only the brick and block-making yard remains operational. The ready-mix yard has been vacated but not formally decommissioned, and the former asphalt plant area is currently utilised as a salvage yard by the mine. Sub-contractors are periodically engaged for contract crushing and mining activities and typically establish temporary site camps within the mining boundaries during operations.

1.1 Mining Footprint

The approved mining footprint for Kimberley Quarry covers the entire Portion 39 of the farm Spijt Fontein No. 122. However, the Mining Right Holder currently utilises only ±172 hectares of the total 370.2447 hectares, located in the southern part of the property, for mining-related activities. The northern part of the farm remains largely in a natural state and is used for the keeping of game species such as Impala (*Aepyceros melampus*). The active mining area is fenced off from the remainder of the farm.

1.2 Northern Quarry

Historically material was mined from the northern quarry pit directly east of the office complex (Figure 1). The current depth of the northern quarry is ±55 m from the highest crest to the lowest floor elevation. Mining eventually moved away from this pit and the development of the southern quarry commenced in ±2009.

Although progressive rehabilitation is periodically carried out in portions of the northern quarry, the greater part of the area remains in need of rehabilitation.

1.3 Southern Quarry

Since 2009, the MR Holder mines the southern quarry (Figure 1) through the opencast mining method where the topsoil (if any) is stripped and stockpiled separately before the excavation is expanded. The dolerite is loosened by conventional drilling and blasting methods, with oversized boulders subjected to secondary breaking or blasting (when possible). The muck pile (blasted rock) is

removed from the pit using excavators and trackless mobile machinery (TMM's) and either deposited directly into the jaw crusher or deposited on the Run of Mine (RoM) stockpile for later processing through the secondary-, tertiary- and quaternary crushing and screening processes to result in the desired products. The material is stockpiled until transported to clients.

1.4 Site Infrastructure

Kimberley Quarry has well-established buildings and infrastructure that support its mining operations. The site is accessed via the N12 national road that connects Kimberley and Hopetown. In addition, the Kimberley – De Aar railway line runs along the western boundary of the mining area.

Kimberley Quarry includes expansive administrative buildings that accommodate all office personnel. Ablution facilities associated with the office complex and workshops drain to a septic tank system, which is serviced as required.

The following main areas are defined at the mine as shown in the following figure:

1. Office Complex & Workshops;
2. Old Ready-mix Concrete Yard;
3. Northern Quarry;
4. Processing Area;
5. Brick and Block-making Yard;
6. Stockpile Areas;
7. Southern Quarry;
8. Overburden and Waste Rock Dumps;
9. Eskom Substation;
10. Salvage Yard.

Figure 1: Satellite view of the various operational areas at Kimberley Stone Quarry where the blue line shows the mine boundary (image obtained from Google Earth).

Also refer to Appendix B2 for the Plant Flow Diagram applicable to Kimberley Quarry.

1.5 Ready-mix Concrete Yard

As mentioned earlier, OMV operated a ready-mix concrete plant within the mining footprint. The operations have since stopped but the plant and associated structures remain.

1.6 Brick and Block-making Yard

Blockpave currently operates a brick and block-making plant located south of the quarry entrance. The brick and block-making yard has been fenced off to clearly demarcate it from the active mining area. The plant sources aggregate from the quarry to manufacture bricks and blocks, which are subsequently sold to clients. The plant operates between 07:00 – 19:00 from Monday to Saturday.

The brick and block-making plant is responsible for the management and safe disposal of its own waste. It utilises municipal electricity and water and is subject to compliance with the mine's EMPR, NEMA, the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as well as applicable municipal by-laws and any other relevant sector-specific regulations.

1.7 Water Use

Production water is sourced from the Sol Plaatje Municipality that reaches the mine via an existing pipeline. The municipal water is also used as drinking water. Water from the sump of the southern quarry pit (and occasionally the northern quarry) is used for dust suppression purposes.

Kimberley Quarry has a water use authorisation (reference no: 25057704) to use water from a borehole on the farm. Groundwater, for agricultural and/or mining purposes, may occasionally be extracted from this borehole.

1.8 Electricity Use

The mining operation is supplied with municipal power from the nearby 11kV power line. Gensets are used as back-up power.

1.9 Servicing and Maintenance

The well-equipped brick workshops of the Quarry, that forms part of the office complex, are used for the repair and maintenance of all mining related equipment

and machinery. Water from the wash bay drains into an oil separator while clean stormwater is directed to an artificial pond near the entrance of the Quarry.

Fuel is stored in a 22 000 l tank in a bunded area. Chemicals are stored in designated storage areas in accordance with the product specific material safety data sheets.

1.10 Waste Management

The MR Holder has an integrated waste management policy, and the company strives to recycle where possible.

Presently, waste is separated into waste that can be re-used, and those that must be removed from the site. General waste (that cannot be reused) is removed by the municipality to the Kimberley landfill site. Hazardous waste is removed from site by qualified hazardous waste handling contractors.

The ablutions of the mine drains into a closed-system septic tank that is serviced by a registered liquid waste removal service provider when needed.

1.11 Labour Component

Presently (June 2025), Kimberley Quarry has a permanent labour component of 35 employees. Sub-contractors are periodically employed for contract crushing and mining operations, who then bring their own personnel. The permanent employees of the Quarry mainly reside in Kimberley or Richie and are daily transported to site. No employees (permanent and/or sub-contractor) reside on site.

2. DECOMMISSIONING OBJECTIVES

The overall objective of a rehabilitation plan is to minimise adverse environmental impacts associated with the quarrying activities whilst maximising the future utilisation of the property. The idea, therefore, is to leave the mined area in a condition that reduces all negative impacts normally associated with mining.

The primary objective, at the end of this project's life cycle, is to obtain a closure certificate in compliance with the requirements of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) [MPRDA]. To achieve this, the following key objectives must be met:

- Demolish and remove all buildings and/or infrastructure that will no longer be required by the landowner, as well as all waste material, in accordance with the requirements of this EMPr and/or the Provincial Department of Mineral Resources and Energy (DMRE).
- Shape and contour all disturbed areas in accordance with the approved Closure Plan.
- Ensure that permanent changes to the topography resulting from mining activities are sustainable and do not pose erosion risks or safety hazards to the landowner or surrounding community.
- Effectively utilise available topsoil to promote the re-establishment of vegetation.
- Ensure that all rehabilitated areas are stable and self-sustaining with adequate vegetation cover.
- Eradicate all invasive and alien plant species by intensive management of the mining area.

The site-specific closure objectives are discussed in the attached Closure Plan (Appendix D), however, a summary of the closure objectives for the mine were included below.

The decommissioning phase will entail the reinstatement of the processing- and stockpile areas by removing the stockpiled material, and site infrastructure and equipment (not required by the landowner) and landscaping the disturbed footprints. It is anticipated that the buildings and roads will be retained for future use by the landowner and will not be removed unless expressly required by the landowner.

Due to the impracticality of importing large volumes of fill to restore the excavations to its original topography, the rehabilitation option is to develop the northern and southern quarries into landscape features. This will entail creating a series of irregular benches along the quarry faces, the top edges of each face being blasted away to form scree slopes on the benches below, thereby reducing the overall face angle. The benches will be softened with overburden, top-dressed with topsoil and vegetated with an appropriate grass mix if vegetation does not naturally establish in the area within six months of the replacement of the topsoil.

The decommissioning activities will therefore consist of the following:

- Sloping and landscaping the quarry pits;
- Removing all stockpiled material;
- Removing all mining machinery, equipment and waste from site;
- Landscaping all disturbed areas and replacing the topsoil;
- Vegetating the reinstated area; and

- Controlling/monitoring the invasive plant species for at least one growth season.

Once the mining area was rehabilitated the MR Holder is required to submit a closure application to the DMRE in accordance with Section 43(4) of the MPRDA, 2002 that states: "*An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report*". The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

2.1 Residual Impacts After Closure

Overburden will be used to soften the benches of the quarry pits and assist with the shaping of the excavation during post-quarrying rehabilitation. Provided all final slopes are maintained at 1:3 batters (quarry rim and mine residue infill) and successfully revegetated, there will be no long term instability in the rehabilitated area. The quarry cliffs precision blasted to angles of not steeper than 85˚ also provide an element of stability to hard rock quarry cliffs.

Once adequately rehabilitated, the quarries will nevertheless behave as a sump and collect surface run-off after wet periods. The floor of the quarries may, therefore, reveal fluctuating water levels depending on rainfall patterns. Considering this, it is important to adequately block access to the excavations (soil berm / oversize rock in entrance) to prevent unauthorized access by humans (especially children) and animals upon closure of the mine.

(GNR 982 APPENDIX 4 SECTION 1(1)(c))

c) COMPOSITE MAP

The mine plan showing the land and mining area to which the right relates, in accordance with Regulation 42 of the Mining Titles Registration Act, 1967 (Act No 16 of 1967), is attached as Appendix A. Also refer to Appendix B1 for the General Surface Plan of the operation.

Figure 2: Satellite view of the Kimberley Quarry mining footprint (image obtained from Google Earth). Note: To optimise space, true north is directed to the left.

D. POLICY AND LEGISLATIVE CONTEXT

a) APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT

Table 2: Policy and Legislative Context.

LEGISLATION	REFERENCE WHERE APPLIED	POLICY CONTEXT APPLICABLE TO PROJECT
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	Section G(b) Impacts to be mitigated in their respective phases.	The mitigation measures proposed for the site includes specifications of the CARA, 1983.
Mine Health and Safety Act, 1996 (Act No 29 of 1996) read together with applicable amendments and regulations thereto including relevant OHSA regulations.	Section H Impact Management Actions and Outcomes. Section I – M Mechanisms for Monitoring Compliance.	The mitigation measures proposed for the site includes specifications of the MHSA, 1996 (as amended).
Mineral and Petroleum Resources Development Act, 2002, (Act No. 28 of 2002) read together with applicable amendments and regulations thereto. ➢ Section 39(6)(a)	Section A Introduction.	The 2011 EMPR of Kimberley Quarry must be amended as a result of an environmental performance audit (2025).

LEGISLATION	REFERENCE WHERE APPLIED	POLICY CONTEXT APPLICABLE TO PROJECT
National Environmental Management Act,1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended) ꢀ Section 35 of GNR 982 (as amended)		
National Environmental Management: Air Quality Control Act, 2004 (Act No 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827.	Section G(b) Impacts to be mitigated in their respective phases. Section H Impact Management Actions and Outcomes. Section I – M Mechanisms for Monitoring Compliance.	The mitigation measures proposed for the site consider the NEM:AQA, 2004 and the National Dust Control Regulations.
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.		The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004.
National Environmental Management: Waste Act, 2008 (Act No 59 of 2008) read together with applicable amendments and regulations thereto. NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)		The mitigation measures proposed for the site consider the NEM:WA.
National Heritage Resources Act. 1999 (Act No 25 of 1999).	Section G(b) Impacts to be mitigated in their respective phases. Section H Impact Management Actions and Outcomes. Section I – M Mechanisms for Monitoring Compliance.	The mitigation measures proposed for the site includes specifications of the NHRA, 1999.
National Water Act, 1998 (Act No 36 of 1998) read together with applicable amendments and regulations thereto.		The mitigation measures proposed for the site includes specifications of the NWA, 1998.
Noise Control Regulations GNR 154 of January 1992 and Application of Noise Control Regulations, CNR 155 of January 1992 framed under the ECA.		The mitigation measures proposed for the site consider the NCR requirements.

b) TABLE OF LEGAL TRIGGERS FOR THE MINING OPERATION

Table 3: Table of Legal Triggers applicable to the Mining Operation.

LEGISLATION	TRIGGER	APPLICABILITY TO KIMBERLEY QUARRY	RESPONSIBLE AUTHORITY	COMPLIANCE STATUS
National Environmental Management Act (NEMA) (Act 107 of 1998)	Environmental Authorisation (EA) required for listed activities.	The approved EMPR is deemed equivalent to an EA in accordance with the provisions of the NEMA, 1998.	DMRE	**Compliant:** Amended EMPR to be submitted for approval.
Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002)	Mining right required for mineral extraction.	OMV Kimberley Mining (Pty) Ltd holds a mining right (NC 30/5/1/2/2/0287 MR).	DMRE	**Compliant:** Mining Right valid until July 2046.
National Water Act (NWA) (Act 36 of 1998)	Water use licensing / General authorisation (Section 21 activities).	Kimberley Quarry has a water use authorisation (reference no: 25057704) to use water from a borehole. However, various other water uses may also trigger Section 21 of the NWA.	DWS	**Potentially Non-Compliant:** The water uses of the Quarry must be reviewed to ensure compliance with Section 21 of the NWA.
National Environmental Management: Air Quality Act (NEM:AQA) (Act 39 of 2004)	Dust control and potential air emission licensing.	Dust suppression measures required to comply with the National Dust Control Regulations.	Municipality Air Quality Officer	**Compliant:** Emissions does not trigger an air emission licence. Dust suppression in place and monthly fallout dust monitoring implemented on site.
National Environmental Management: Waste Act (NEMWA) (Act 59 of 2008)	Waste management licensing for hazardous and general waste.	Waste is removed by registered contractors; no on-site disposal occurs.	DMRE	**Compliant:** Waste managed per legal requirements.
National Heritage Resources Act (NHRA) (Act 25 of 1999)	Heritage impact assessment required if archaeological finds occur.	No known heritage resources within the mining footprint.	SAHRA / Provincial Heritage Resources Agency – Northern Cape (PHRA-NC)	**Compliant:** No known heritage sites in the mining area.

LEGISLATION	TRIGGER	APPLICABILITY TO KIMBERLEY QUARRY	RESPONSIBLE AUTHORITY	COMPLIANCE STATUS
Occupational Health and Safety Act (OHSA) (Act 85 of 1993)	Workplace safety and hazard management.	Compliance with safety regulations for workers and mining equipment.	Department of Labour (DoL)	**Compliant:** Safety regulations followed, but ongoing audits required.
Conservation of Agricultural Resources Act (CARA) (Act 43 of 1983).	Land degradation and soil conservation measures.	Measures required for erosion control and vegetation restoration.	Department of Agriculture, Environmental Affairs, Rural Development and Land Reform	**Compliant**: Rehabilitation plan in place but requires ongoing monitoring
Noise Control Regulations (GNR 154 of 1992, under the Environment Conservation Act).	Noise level monitoring and control.	Blasting and mining operations generate noise, requiring mitigation measures.	DMRE	**Compliant:** Noise monitoring in place.
National Road Traffic Act (NRTA) (Act 93 of 1996)	Regulation of transport for heavy mining vehicles.	Trucks transport material via public roads; overloading must be prevented.	SANRAL	**Compliant:** Transport regulations followed, but monitoring required

E. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

The relevant landowner, stakeholders and I&AP's will be informed of the proposed EMPR amendment by means of an advertisement in the Noordkaap Bulletin newspaper, and on-site notices that will be placed at conspicuous places. A notification letter inviting comments on the EMPR amendment over a 30-days commenting period (ending 23 September 2025) will be send to the landowner, neighbouring landowners (that can be identified), stakeholders, and any other I&AP that may be interested in the project and who's contact details could be obtained. All notifications will be available in both Afrikaans and English. The comments received on the draft EMPR amendment will be incorporated into the final EMPR amendment to be submitted to the DMRE for consideration.

Table 4: List of the I&AP's and stakeholders that will be notified of the EMPR amendment.

SURROUNDING LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
Θ Raumix Aggregates (Pty) Ltd (Landowner) Portion 39 of Spijt Fontein No 122 Θ Mr H Booysen Eureka No 200 Θ Imithi (Pty) Ltd Portion 3 of Mauritsfontein No 126 Θ Mr TC Robertson Portion 15 of Spijt Fontein No 122 Θ Eskom Portion 41 of Spijt Fontein No 122 Θ Mr JHG Blignault & Me L Brits Portion 29 of Spijt Fontein No 122 Θ Namakwa Boerdery No 3 (Pty) Ltd Portion 25 (Remaining Extent) of Spijt Fontein No 122 Θ Marnel CC Portion 32 of Spijt Fontein No 122 Θ Mr JA Kruger Portion 34 of Spijt Fontein No 122 Θ Property of South Africa Farm No 121 Θ Transnet Ltd Portion 3 of Bultfontein No 80 Θ Mr B Coetzee Portion 76 of Bultfontein No 80 Θ Blockpave (Pty) Ltd Lawful land user	Θ Department of Agriculture, Environmental Affairs, Rural Development and Land Reform Θ Department of Economic Development and Tourism Θ Department of Labour Θ Department of Roads and Public Works Θ Department of Water and Sanitation Θ Eskom Θ Francis Baard District Municipality Θ SAHRA Θ SANRAL Θ Sol Plaatje Local Municipality Θ Sol Plaatje Local Municipality Ward No 26 Θ Transnet

Refer to the following table for an explanation on how the public participation process of this project will take the methods stipulated in Regulation 41 of the NEMA Regulations into account.

Table 5: Table comparing the required methods with the public participation process of this project.

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
Θ Regulation 41(2)(a): *Fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of-* *(i) The site where the activity to which the application or proposed application relates is or is to be undertaken; and* (ii) *Any alternative site.* Θ Regulation 41(3): *A notice, notice board or advertisement referred to in subregulation (2) must—* *(a) give details of the application or proposed application which is subjected to public participation; and* *(b) state—* *(i) whether basic assessment or S&EIR procedures are being applied to the application;* *(ii) the nature and location of the activity to which the application relates;* *(iii) where further information on the application or proposed application can be obtained; and* (iv) *the manner in which and the person to whom representations in respect of the application or proposed application may be made.* Θ Regulation 41(4): *A notice board referred to in subregulation (2) must—* *(a) be of a size of at least 60cm by 42cm; and* (b) *display the required information in lettering and in a format as may be determined by the competent authority.*	Notice boards will be fixed at a minimum of two conspicuous and publicly accessible areas. The notice boards will comply with the requirements of Regulation 41(3). The notices will be printed on boards of 60 x 42 cm in Arial font of sufficient size. The notice boards will be available in both Afrikaans and English.
Θ Regulation 41(2)(b): *giving written notice, in any of the manners provided for in section 47D of the Act, to-* (i) *the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;*	(i) The MR Holder is in constant consultation with the landowner who is aware of the proposed EMPR amendment. The landowner will be invited to comment on the draft EMPR. (ii) The directly surrounding landowners, and lawful occupiers of the land (if applicable and if identifiable) will be informed of the project and invited to comment on the EMPR amendment.

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
(ii) *owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;* (iii) *the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area;* *(iv) the municipality which has jurisdiction in the area;* *(v) any organ of state having jurisdiction in respect of any aspect of the activity;* *(vi) any other party as required by the competent authority;*	(iii) The Ward Councillor applicable to the mining footprint will be invited to comment on the project and the EMPR amendment. (iv) Representatives from the local and district municipalities will be invited to comment on the project and EMPR amendment. (v) As listed in Table 4 the relevant state departments and entities will be invited to comment on the project and the EMPR amendment.
Θ Regulation 41(2)(c): *Placing an advertisement in-* *(i) One local newspaper; or* *(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations.*	The project and availability of the amended EMPR will be advertised in the Noordkaap Bulletin newspaper on 21 August 2025.
Θ Regulation 41(2)(d): *Placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken…*	The Noordkaap Bulletin is a provincial newspaper distributed in English and Afrikaans, free of charge in the region applicable to this application.
Θ Regulation 41(2)(e): *Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to—* *(i) illiteracy;* *(ii) disability; or* (iii) *any other disadvantage.*	If applicable, I&AP's without emails will be messaged via Whatsapp or SMS. Persons not answering their telephones will also be messaged to explain the reason for the call from the consultants.
Θ Regulation 41(5): *Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d)…*	Not applicable to this application.
Θ Regulation 41(6): *When complying with this regulation, the person conducting the public participation process must ensure that—*	The amended EMPR containing all the facts in respect of this application will be available to the landowner, stakeholders and potential I&AP's for perusal and commenting over a 30-days

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
(a) information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and (b) *participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.*	commenting period. The amended EMPR will also be available on the Greenmined website. I&AP's and stakeholders will be invited to contact the EAP should additional information be required. The comments received on the draft EMPR amendment will be incorporated into the final EMPR amendment to be submitted for departmental consideration.
Θ Regulation 41(7): *Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.*	Not applicable to this project.

a) SUMMARY OF ISSUES RAISED BY I&APS

Table 6: Summary of issues raised by IAPs

INTERESTED AND AFFECTED PARTIES		DATE COMMENTS RECEIVED	ISSUES RAISED	EAPS RESPONSE TO ISSUES AS MANDATED BY THE MR HOLDER	SECTION AND PARAGRAPH REFERENCE IN THIS REPORT WHERE THE ISSUES AND OR RESPONSE WERE INCORPORATED
AFFECTED PARTIES	**X**	-	-	-	-
Landowner/s	**N/A**	-	-	-	-
Raumix Aggregates (Pty) Ltd	x	The landowner is aware of and supports the proposed amendment of the EMPR.			
Lawful occupier/s of the land	-	-			
Blockpave (Pty) Ltd	X	Any comments received from Blockpave (Pty) Ltd will be incorporated into the final EMPR amendment.			
Landowners or lawful occupiers on adjacent properties	**X**	-			
Mr H Booysen Θ Eureka No 200	X	Any comments received from the surrounding landowners will be incorporated into the final EMPR amendment.			
Impithi (Pty) Ltd Θ Portion 3 of Mauritsfontein No 126	X				
Mr TC Robertson Θ Portion 15 of Spijt Fontein No 122	X				
Eskom Θ Portion 41 of Spijt Fontein No 122	X				

INTERESTED AND AFFECTED PARTIES		DATE COMMENTS RECEIVED	ISSUES RAISED	EAPS RESPONSE TO ISSUES AS MANDATED BY THE MR HOLDER	SECTION AND PARAGRAPH REFERENCE IN THIS REPORT WHERE THE ISSUES AND OR RESPONSE WERE INCORPORATED
Mr JHG Blignault & Me L Brits Θ Portion 29 of Spijt Fontein No 122	X				
Namakwa Boerdery No 3 (Pty) Ltd Θ Portion 25 (Remaining Extent) of Spijt Fontein No 122	X				
Marnel CC Θ Portion 32 of Spijt Fontein No 122	X				
Mr JA Kruger Θ Portion 34 of Spijt Fontein No 122	X				
Property of South Africa (care of Department of Public Works) Θ Farm No 121	X				
Transnet Ltd Θ Portion 3 of Bultfontein No 80	X				
Mr B Coetzee Θ Portion 76 of Bultfontein No 80	X				
Municipal councillor	**X**	-	-	-	-

INTERESTED AND AFFECTED PARTIES		DATE COMMENTS RECEIVED	ISSUES RAISED	EAPS RESPONSE TO ISSUES AS MANDATED BY THE MR HOLDER	SECTION AND PARAGRAPH REFERENCE IN THIS REPORT WHERE THE ISSUES AND OR RESPONSE WERE INCORPORATED
Sol Plaatje Local Municipality (Ward 26)	X	Any comments received from the ward councillor will be incorporated into the final EMPR amendment.			
Municipality		-	-	-	-
Sol Plaatje Local Municipality (SPLM)	X	Any comments received from the municipality will be incorporated into the final EMPR amendment.			
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e	-	-	-	-	-
Department of Roads and Public Works (DRPW)	X	Any comments received from the DRPW will be incorporated into the final final EMPR amendment.			
Department of Water and Sanitation (DWS)	X	Any comments received from the DWS will be incorporated into the final EMPR amendment.			
Eskom	X	Any comments received from Eskom will be incorporated into the final EMPR amendment.			
SANRAL	X	Any comments received from SANRAL will be incorporated into the final EMPR amendment.			

INTERESTED AND AFFECTED PARTIES		DATE COMMENTS RECEIVED	ISSUES RAISED	EAPS RESPONSE TO ISSUES AS MANDATED BY THE MR HOLDER	SECTION AND PARAGRAPH REFERENCE IN THIS REPORT WHERE THE ISSUES AND OR RESPONSE WERE INCORPORATED
Transnet	X	Any comments received from Transnet will be incorporated into the final EMPR amendment.			
Communities	No communities were identified within the study area.				
Dept. Land Affairs	X	Any comments received from the Department of Land Affairs will be incorporated into the final EMPR amendment.			
Traditional Leaders	N/A	N/A	N/A	N/A	N/A
Other Competent Authorities affected	X	-	-	-	-
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAEARDLR)	X	Any comments received from DAEARDLR will be incorporated into the final EMPR amendment.			
Department of Economic Development and Tourism (DEDT)	X	Any comments received from DEDT will be incorporated into the final EMPR amendment.			
Department of Labour (DoL)	X	Any comments received from DoL will be incorporated into the final EMPR amendment.			
South African Heritage Resources Agency (SAHRA)	X	Any comments received from SAHRA will be incorporated into the final EMPR amendment.			

F. ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE MINING AREA

a) CLIMATE

The following graph shows the maximum, minimum and average temperatures of the Kimberley region. Kimberley experiences its highest temperatures during the summer months from November – March with peaks of up to 35°C; thereafter the mercury drops to lows of 5°C during June/July.

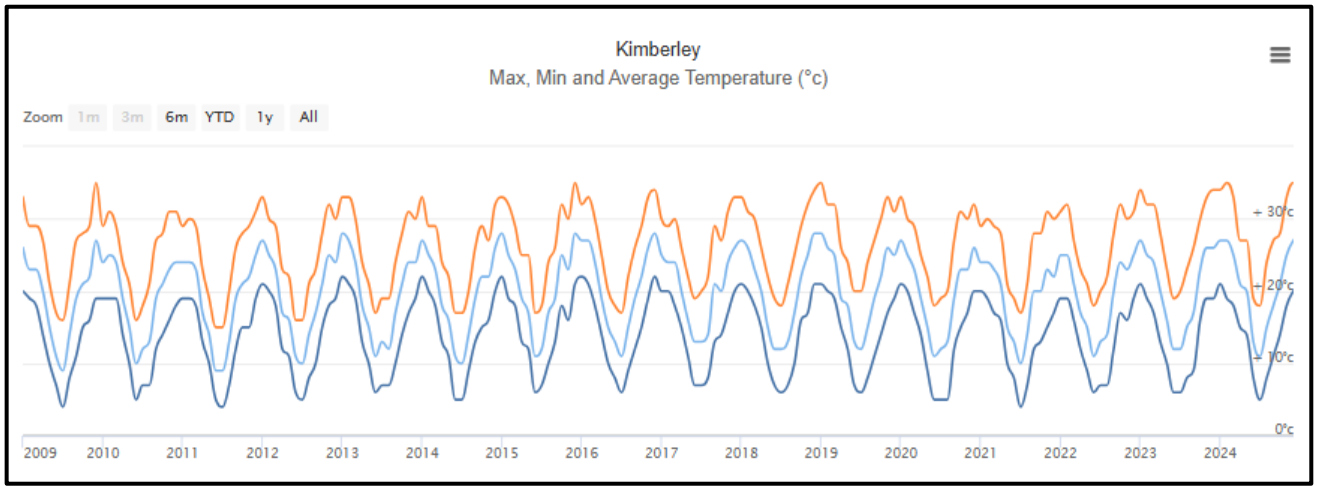

Figure 3: Maximum, minimum, and average temperature of the Kimberley region where the orange line indicates the maximum temperature, the light blue line shows the averages, and the dark blue line shows the minimum temperatures (chart obtained from http://www.worldweatheronline.com)

According to the 2011 EMPR the average rainfall of the Kimberley area is ±414 mm that mainly occurs as summer thunderstorms, while the evaporation is generally well in excess of the rainfall. The following chart, obtained from World Weather Online, shows that the measured rainfall for the period January 2024 to January 2025 was ±322 mm, while the area received the lowest rainfall during August 2024 and the highest in April 2024.

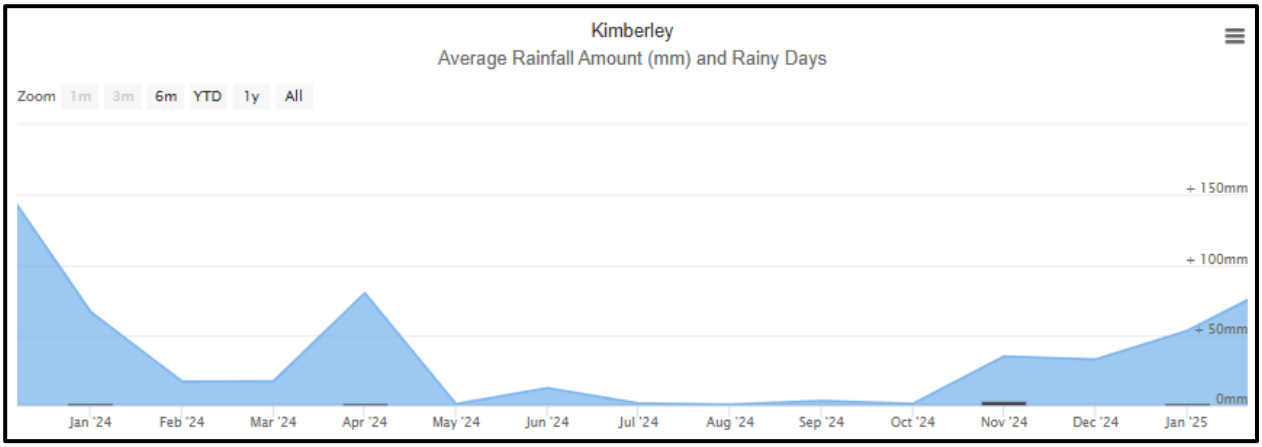

Figure 4: Average rainfall amount and rainy days count for the Kimberley region between January 2024 and January 2025 (chart obtained from http://www.worldweatheronline.com)

The Kimberley Airport is the nearest weather station to the mine that provides wind statics. According to the data, the dominant wind direction of the region is fairly constant in a north to north-north-western direction (south / south-easterly wind), with the average wind speed being ±7.8 knots as shown in the figure below.

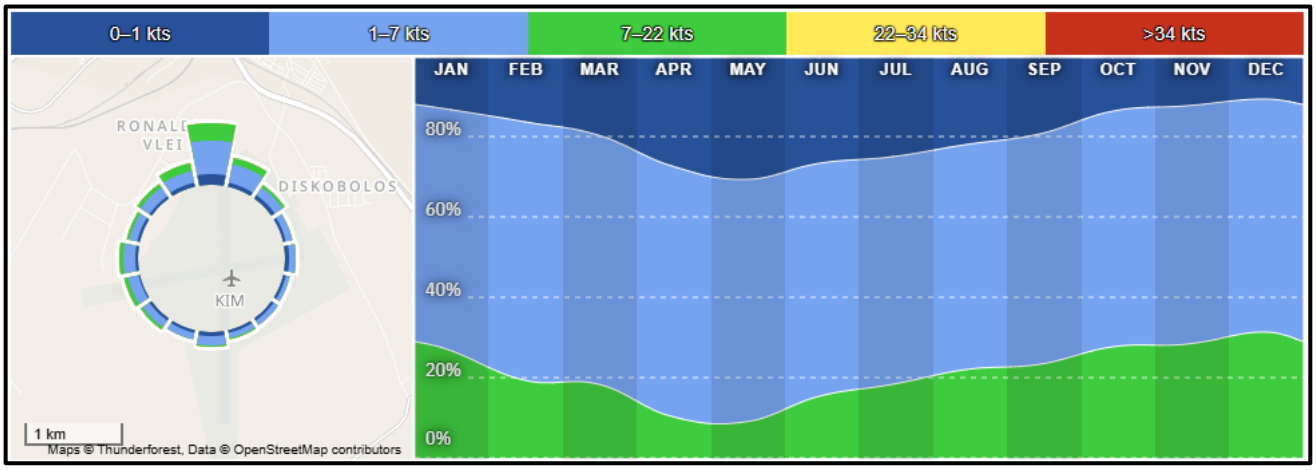

Figure 5: Image showing the dominant wind direction (first panel) and average wind speed over a 12 month period as measured at the Kimberley Airport (image obtained from http://www.windfinder.com/windstatistics/kimberley).

b) TOPOGRAPHY

The mining footprint is located on a slight ridge that runs roughly NE/SW above the 1 200 m contour. The railway line on the western boundary of the farm follows the 1 200 m contour, the largest portion of the property is between 1 220 m, and 1 240 m (see contours below). The highest elevation is in the north-eastern corner where the trig beacon is situated at 1 246.8 m. The property slopes slightly towards the S/W on the NE/SW axis. Historically mining impacted the topography of the farm even before 2011.

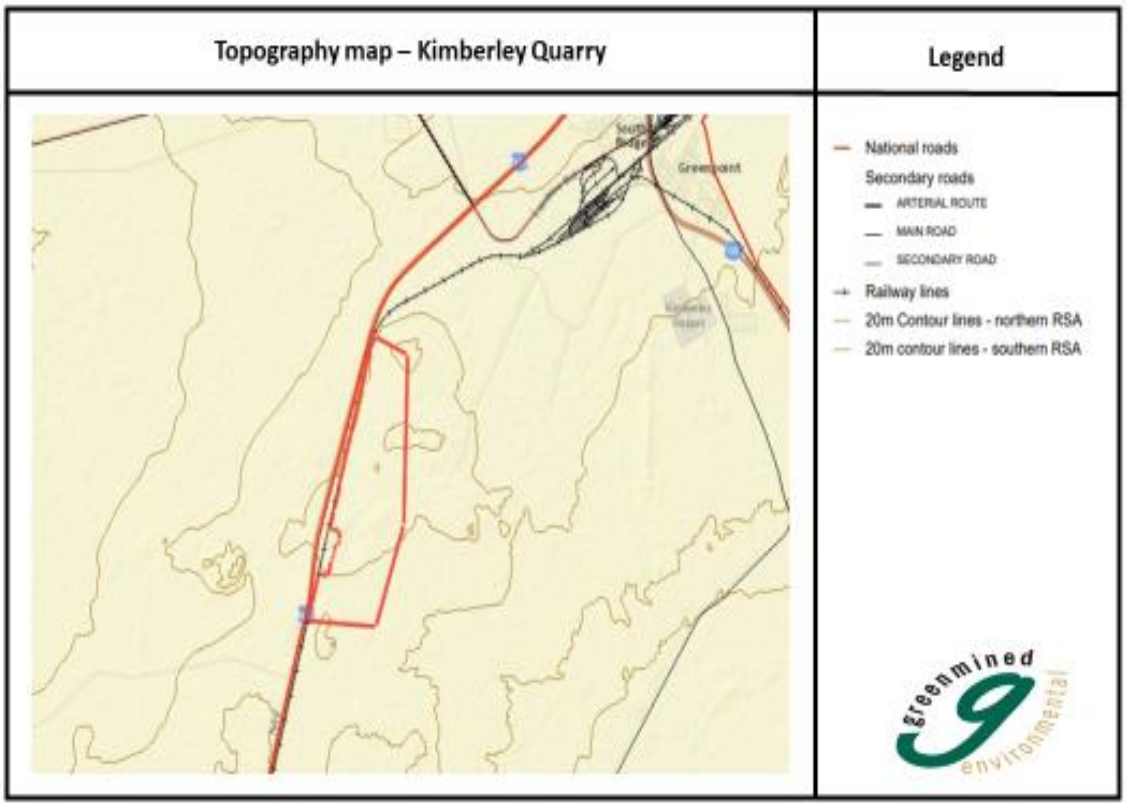

Figure 6: Contours of the Kimberley Quarry

As presented in the following figure, the topography of the farm is flat to gently undulating with the excavations bringing about clear depressions in the topography. The route indicated below shows an average slope of 4.7% over 4.39 km, with a maximum elevation gain of 118 m (or -118 m elevation loss).

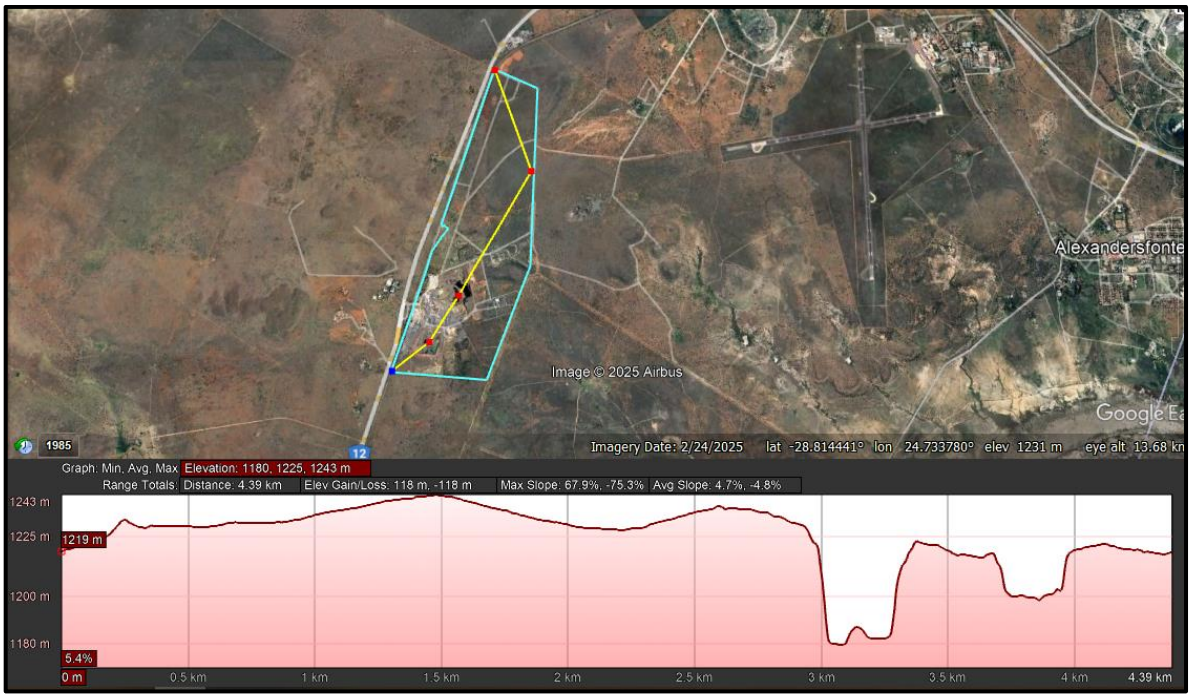

Figure 7: Elevation profile of the mining area (Image obtained from Google Earth).

c) VISUAL CHARACTERISTICS

The surrounding land is predominantly used for livestock grazing and occasional agricultural activity such as bird farming. Mining and light industrial operations are scattered across the broader area. Infrastructure such as access roads, fencing, and utility lines is visible and contributes to a semi-modified rural landscape character. The railway line, running along the western boundary of the farm/mining area, is a prominent existing linear feature that introduces another man-made visual element into the otherwise predominantly rural and semi-natural setting. The urban edge of Kimberley is visible from higher ground and contributes a more developed visual component to the northern horizon.

Although the surrounding area is not designated as a visually sensitive landscape, the flat terrain and open viewsheds allow for long lines of sight, making large-scale surface disturbances such as quarrying clearly visible from surrounding areas. Visual receptors may include passing motorists on nearby roads, adjacent landowners, and workers on surrounding properties. The quarry's visual impact is moderated by the generally low population density and sparse development in the immediate vicinity.

d) AIR QUALITY AND NOISE AMBIANCE

Air Quality

The general air quality in the vicinity of Kimberley Quarry is characteristic of a semi-arid, rural environment with low background pollutant levels. The area is situated outside of the main urban centre of Kimberley and is not subject to significant industrial or vehicular emissions under normal conditions. Natural dust from wind erosion of exposed soils, and vehicles travelling along gravel roads particularly during the dry season or windy periods, is a common feature of the regional air quality.

Kimberley Quarry contributes to the air quality of the area through the following:

- Quarrying operations, including blasting, crushing, and materials handling, which contribute to the generation of particulate matter, particularly during dry and windy conditions.
- Heavy vehicle movement on unpaved haul roads, which can further increase dust levels.
- Windblown dust from cleared areas, stockpiles and exposed rock surfaces.

Overall, air quality is generally acceptable away from the immediate quarry footprint but may be temporarily and locally compromised during active quarry operations without adequate dust suppression measures.

Noise Ambiance

The ambient noise levels in the area are generally **low**, reflecting the rural character and low population density of the region. Background noise typically consists of:

- Natural sounds, such as wind, insects, and occasional bird calls.
- Distant agricultural activity, including livestock and occasional farm machinery.
- Intermittent rail traffic which contributes short-term increases in ambient noise when trains pass.
- Vehicle traffic along the nearby N12 national highway connecting Kimberley and Hopetown.

Within and around the Quarry, elevated noise levels are associated with:

- Blasting, which produces sharp, short-duration noise events.
- Drilling, crushing, and screening operations, which generate continuous mechanical noise during operational hours.
- Heavy machinery and truck movement, both within the site and on access routes.

Noise levels from quarry operations decrease significantly with distance due to natural sound attenuation by air, terrain, and vegetation. The nearest potential noise receptor is located ±400 metres west of the processing plant, while additional residential dwellings are situated ±800 metres and 1 kilometre to the south-west and south-south-west, respectively. Although these distances provide a degree of buffer, the proximity of these receptors warrants careful consideration of noise management measures, particularly during periods of intense activity or if operations are extended into evening hours.

e) GEOLOGY AND SOIL

Geological Setting

(Information extracted from the Kimberley Quarry Mandatory Code of Practice)

The mining area is founded upon the Northern Facies of the Prince Albert Formation, which is the lowest formation within the Ecca Group, and is overlain by the Whitehill Formation. The Northern Facies of the Prince Albert Formation is characterised by the predominance of greyish to olive-green micaceous shale and grey silty shale, as well as a pronounced transition to the underlying glacial deposits. Dark grey to black carbonaceous shale and fine- to medium-grained feldspathic arenite and greywacke are also present. Brownish calcareous concretions and irregular carbonate bodies are present in both the sandstones and mudrocks. One small Kimberlite deposit exists on the property. These softer sediments are visible as overburden overlying the dolerite sill.

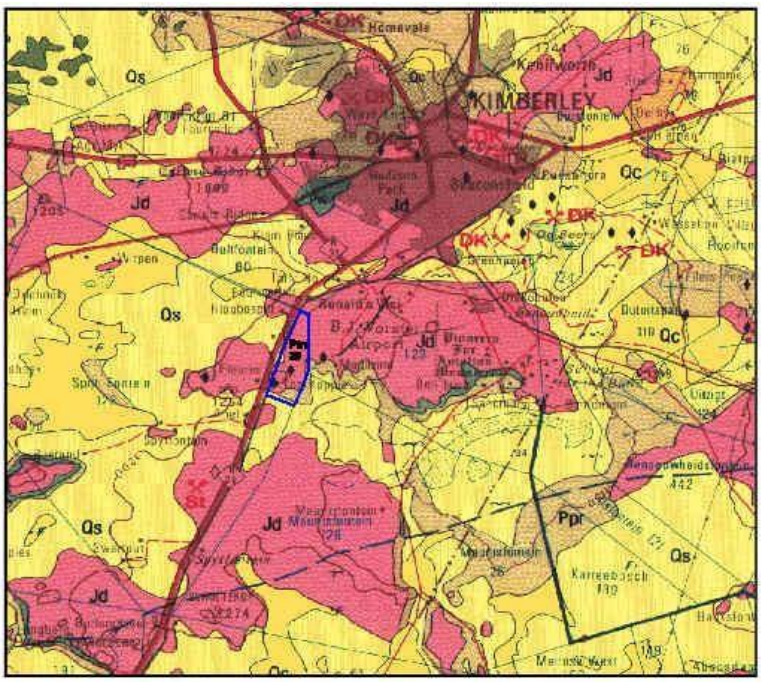

Figure 8: Locality of Kimberley Quarry shown in blue on the 1:250 000 Geological Map. "Jd" denotes Dolerite of Jurassic Age and "Qs" denotes Sand of the Quaternary Age (Kimberley Quarry COP).

Geological Structures

The dolerite ore body dips gently southwards at more or less between 1° and 8°. The joint spacing between these flat dipping planes range between 20 cm on the dolerite above the Ecca Shales to about a metre thick below the Ecca Shales. Near perpendicular to these flat dipping planes, the predominant pattern of fracturing in the rock is near-vertical, with the strike of the joints in all directions throughout the quarry. However, in certain localised areas in the quarry there are trends of joint strike directions. The scattering of the strike directions together with the closely spacing's thereof, result in the blocky nature and assist in the rock breaking.

Weathered surfaces of the upper layers of the dolerite show red brown in color resulting from iron oxide staining, whilst the dolerite deeper below retains its appearance after years of exposing to the elements and showing very little sign of weathering. This makes the mineral most sought after both as a road layering material as well as an aggregate.

Ore Body

Kimberley Quarry mines the dolerite that is extruded through the Ecca Shales. The dolerite is mineralogically described as medium- to course- grained, consisting essentially of augite and plagioclase feldspar. The overburden cover is mainly weathered dolerite with negligible red iron-rich topsoil. The topsoil consists mainly of a 100 mm to 300 mm uniform layer of typical Kimberley red soil. Dolomite (calcrete) and Kimberlite outcrops occur to the north-east of the mining area with deeper sandy soils in the southeast section of the mining property. The subsoil consists of weathered dolerite to a depth that varies between 1 and 3 meters.

f) HYDROLOGY

Kimberley Quarry is situated in a semi-arid region characterized by hot summers and cool to cold winters, seasonal rainfall patterns, high evaporation rates, and generally limited surface water availability.

Surface Water

The mining area is situated within the Riet-Modder sub-water management area that forms part of the Upper Orange Water Management Area (ID 12). As almost no well-developed drainage lines exist on the property, it is assumed that very little run-off is produced except during a storm event. None of the drainage lines has any surface water during dry weather, and no natural wetlands or dry pans occur on the property.

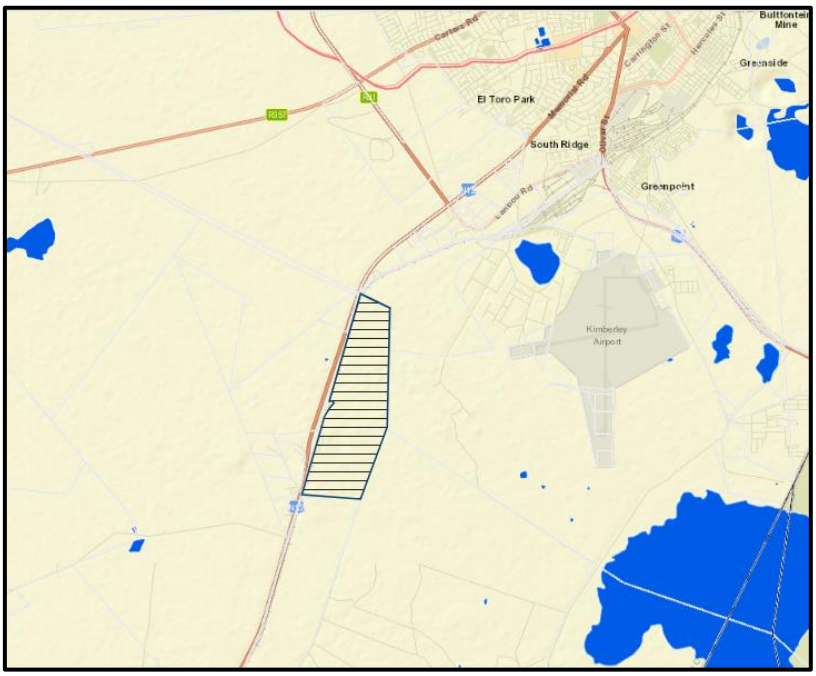

Figure 9: Hydrology of the Kimberley area as presented on the National Wetland and NFEPA BGIS map viewer.

The mine utilises water that accumulates in the excavations for occasional aggregate washing and for dust suppression purposes. An artificial pond (commonly referred to as the "duck pond"), located near the main entrance to the quarry, is supplied by runoff rainwater from the surfaced and paved areas surrounding the workshops and office buildings. In addition, Kimberley Quarry uses water for the following purposes (non-exhaustive list):

- Ablutions: Municipal water that drains from ablutions into a septic tank,
- Dust Suppression: Municipal water & water from the quarry pits,
- Potable Water: Municipal water,
- Washing of material: Water from the quarries,
- Workshops: Municipal water that drains to an oil sump.

The brick and block-making plant is similarly supplied with municipal water for ablution facilities, drinking water, and processing activities.

Groundwater

The average water table depth of boreholes on and around the farm Spijt Fontein No 122 range between 100 m to 120 m. The borehole of Spijt Fontein No 122 is located in the northern part of the farm managed as a game farm. Groundwater, for agricultural and mining purposes is occasionally used from the borehole.

Importance of Water Quality Monitoring

Water quality monitoring is a critical component of environmental management at mining operations, as it enables the early detection of potential contamination and ensures compliance with legal and regulatory standards, including those set by the National Water Act (Act No. 36 of 1998). Regular monitoring helps to protect surrounding surface and groundwater resources from degradation due to mining-related activities such as excavation, material washing, and hydrocarbon use in workshops. It also provides essential data for assessing the effectiveness of pollution control measures, safeguarding the health of local ecosystems, downstream users, and the broader environment. By implementing a proactive water quality monitoring programme, Kimberley Quarry demonstrates its commitment to sustainable resource use and environmental protection throughout the life of the mine and into closure.

It is proposed that the annual surface water quality monitoring programme for the Quarry included key parameters such as pH, electrical conductivity (EC), total dissolved solids (TDS), sulphates, nitrates, phosphates, and total petroleum hydrocarbons (TPH), among others. These parameters are aligned with the Department of Water and Sanitation (DWS) Water Quality Guidelines for aquatic ecosystems and domestic use. The full list of applicable parameters and sampling requirements is provided in Appendix G of this EMPr.

g) TERRESTRIAL BIODIVERSITY AND GROUNDCOVER

According to Mucina and Rutherford (2012) the natural vegetation types of the study area comprises the Kimberly Thornveld (SVk 4) as indicated in the following figure.

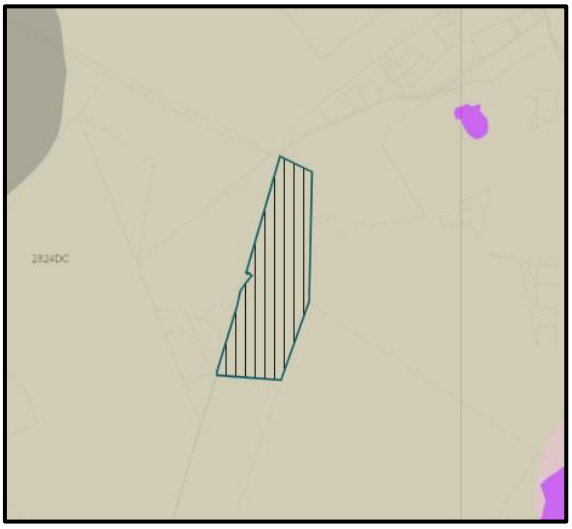

Figure 10: BGIS National Vegetation Map showing the vegetation type of the study area, where the brown shading indicates the Kimberley Thornveld (SVk4), and the black stripped polygon indicates the mine. (Image obtained from the BGIS Map Viewers website).

Kimberley Thornveld (SVk4)

The vegetation and landscape features of this vegetation type comprise of often slightly irregular plains with a well-developed tree layer with *Vachellia erioloba*, *V. tortilis*, *V. karroo* and *Boscia albitrunca* and a well-developed shrub layer with occasional dense stands of *Tarchonanthus camphoratus* and *Senegalia mellifera*. The grass layer is mainly open with uncovered soil patches.

The dominate vegetation consist of *Vachellia erioloba*. Small Trees: *Vachellia karroo*, *V. mellifera* subsp. *detinens*, *V. tortilis* subsp. *heteracantha*, *Searsia lancea*. Tall Shrubs: *Tarchonanthus camphoratus*, *Diospyros pallens*, *Ehretia rigida* subsp. *rigida*, *Euclea crispa* subsp. *ovata*, *Grewia flava*, *Lycium arenicola*, *L. hirsutum*, *Rhus tridactyla*. Low Shrubs: *Vachellia hebeclada* subsp. *hebeclada*, *Anthospermum rigidum* subsp. *pumilum*, *Helichrysum zeyheri*, *Hermannia comosa*, *Lycium pilifolium*, *Melolobium microphyllum*, *Pavonia burchellii*, *Peliostomum leucorrhizum*, *Plinthus sericeus*, *Wahlenbergia nodosa*. Succulent Shrubs: *Aloe hereroensis* var. *hereroensis*, *Lycium cinereum*. Graminoids: *Eragrostis lehmanniana*, *Aristida canescens*, *A. congesta*, *A. mollissima* subsp. *argentea*, *Cymbopogon pospischilii*, *Digitaria argyrograpta*, *D. eriantha* subsp. *eriantha*, *Enneapogon cenchroides*, *E. scoparius*, *Eragrostis rigidior*, *Heteropogon contortus*, *Themeda triandra*. Herbs: *Barleria macrostegia*, *Dicoma schinzii*, *Harpagophytum procumbens* subsp. *procumbens*, *Helichrysum cerastioides*, *Hermbstaedtia odorata*, *Hibiscus marlothianus*, *Jamesbrittenia aurantiaca*, *Lippia scaberrima*, *Osteospermum muricatum*, *Vahlia capensis* subsp. *vulgaris*. Succulent Herbs: *Aloe grandidentata, Piaranthus decipiens*.

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) almost 2% is statutorily conserved in the Vaalbos National Park as well as the Sandveld, Bloemhof Dam, and SA Lombard Nature Reserves. More than 18% has been transformed for mainly cultivation. A conservation target of 16% was set for the vegetation type.

2018 SANBI Vegetation Map

According to the latest vegetation map provided for South Africa (SANBI, 2018), the project site is still within the Kimberly Thornveld.

Site Specific Conditions

As mentioned earlier, the northern part (±198 ha) of Portion 39 of the farm Spijt Fontein No 122 is used as game farm, while mining is contained to the southern ±172 ha of the farm. While the vegetation of the northern part resembles the Kimberley Thornveld, mining did necessitate the removal of the natural vegetation cover in parts of the southern section.

Vegetation removal is however contained to the operational areas (±60 ha) with the remaining areas exhibiting a well-established vegetation layer. Bush clumps are dominated by Umbrella Thorn trees (*Vachellia tortilis*), Buffalo Thorn (*Ziziphus mucronata*), Karee (*Searsia lancea*), and Camphor Bush (*Tarchonanthus camphoratus*) in especially the eastern parts. The grassland component is rich in both grass and forb species. The *Anthephora pubescens* (Bottle Brush Grass) and *Aristida congesta* (Tassel Three-awned Grass) grasses are dominant in especially recently disturbed areas.

There are no endangered and or protected plant species within the mining footprint that needs special protection and/or management practices. When needed the MR Holder removes the vegetation cover with the topsoil (where available) that is stockpiled separately to be used during the rehabilitation phase.

Invasive and/or alien plant species known to occur in the disturbed areas include (but is not limited to) the following:

Θ *Argemone mexicana*	Mexican Poppy	NEM:BA Category 1b
Θ *Datura ferox*	Large Thorn Apple	NEM:BA Category 1b
Θ *Flaveria bidentis*	Smelter's-bush	NEM:BA Category 1b
Θ *Nicotiana glauca*	Wild Tobacco	NEM:BA Category 1b
Θ *Opuntia spp.*	Prickly Pear	NEM:BA Category 1b
Θ *Pennisetum setaceaum*	Fountain Grass	NEM:BA Category 1b
Θ *Salsola kali*	Russian Tumbleweed	NEM:BA Category 1b
Θ *Xanthium strumarium*	Large Cocklebur	NEM:BA Category 1b

h) FAUNA

The greater area is characterised by a variety of animals and the 2011 EMPR notes that an extensive bird life is found at the mine (refer to following table).

Table 7: Bird list of species common at and around Kimberley Quarry

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
Feral Pigeon	*Columba livia*	Purple roller	*Coracias naevius*
Speckled Pigeon	*Columba guinea*	Hoopoo	*Upupa epops*
Red-eyed Dove	*Streptopelia semitorquata*	Scimitarbilled woodhoopoo	*Rhinopomastus cyanomelas*
Cape Turtle Dove	*Streptopelia capicola*	Grey hornbill	*Tockus nasutus*
Laughing Dove	*Spilopelia senegalensis*	Pied barbet	*Tricholaema leucomelas*
Namaqua Dove	*Oena capensis*	Crested barbet	*Trachyphonus vaillantii*
Diederik Cuckoo	*Chrysococcyx caprius*	Rufousnaped lark	*Mirafra africana*
Red-chested Cuckoo	*Cuculus solitarius*	Clapper lark	*Mirafra apiata*
Barn Owl	*Tyto alba*	Fawncoloured lark	*Mirafra africanoides*
Pearl-spotted Owlet	*Glaucidium perlatum*	Chestnutbacked finchlark	*Eremopterix leucotis*
Spotted Eagle-Owl	*Bubo africanus*	Greybacked finchlark	*Eremopterix verticalis*
White-rumped Swift	*Apus caffer*	European swallow	*Hirundo rustica*
Little Swift	*Apus affinis*	Greater striped swallow	*Hirundo cucullata*
White-backed Mousebird	*Colius colius*	Forktailed drongo	*Dicrurus adsimilis*
Red-faced Mousebird	*Urocolius indicus*	Black crow	*Corvus capensis*
Brown-hooded Kingfisher	*Halcyon albiventris*	Pied crow	*Corvus albus*
Lilac-breasted Roller	*Coracias caudatus*	Ashy tit	*Parus cinerascens*
Fiscal Shrike	*Lanius collaris*	Pied babbler	*Turdoides bicolor*
Glossy Starling	*Lamprotomis nitens*	Redeyed bulbul	*Pycnonotus nigricans*
Cape White Eye	*Zosterops virens*	Groundscraper thrush	*Turdus litsitsirupa*
Whitebrowed Sparrowweaver	*Plocepasser mahali*	Familiar chat	*Cercomela familiaris*
House Sparrow	*Passer domesticus*	Anteating chat	*Myrmecocichla formicivora*
Great Sparrow	*Passer motitensis*	Stonechat	*Saxicola torquata*
Cape Sparrow	*Passer melanurus*	Cape robin	*Cossypha caffra*
Masked Weaver	*Ploceus velatus*	Kalahari robin	*Erythropygia paena*
Redbilled quelea	*Quelea quelea*	Titbabbler	*Parisoma subcaeruleum*
Red Bishop	*Euplectes orix*	Fantail cisticola	*Cisticola juncidis*
Longtailed Widow	*Euplectes progne*	Desert cisticola	*Cisticola aridula*
Melba Finch	*Pytilia melba*	Rattling cisticola	*Cisticola chiniana*
Redbilled Firefinch	*Lagonosticta senegala*	Spotted flycatcher	*Muscicapa striata*
Common Waxbill	*Estrilda astrild*	Chat flycatcher	*Melaenornis infuscatus*
Redheaded Finch	*Amdina erythrocephala*	Fiscal flycatcher	*Sigelus silens*
Quail Finch	*Ortygospiza atricollis*	Cape wagtail	*Motacilla capensis*
Pintailed Whydah	*Vidua macroura*	Orange striated longclaw	*Macronyx capensis*
Shafttailed Whydah	*Vidua regia*	Lesser grey shrike	*Lanius minor*
Blackthroated Canary	*Serinus atrogularis*	Grassveld pipit	*Anthus cinnamomeus*
Swallowtailed Bee-Eater	*Merops hirundineus*	Yellow Canary	*Serinus flaviventris*
Kalahari Robins	*Erythropygia paean*	Dusky Sunbird	*Nectarinia fusca*
Common Quail	*Cotumix cotumix*	Cardinal Woodpecker	*Dendropicos fuscescens*
White-breasted Cormorant	*Phalacrocorax cardo*	Grey Heron	*Area cinerea*
Black headed Heron	*Ardea melanocephala*	Cattle Egret	*Bululcus ibis*
Hamerkop	*Scopus umbrette*	Hadeda Ibis	*Bostrychia hagedash*
Whitefaced Duck	*Dendrocygna viduata*	Egyptian Goose	*Alophocen aegyptiacus*
Yellowvilled Duck	*Anas undulate*	Redbilled Duck	*Anas erythrorhyncha*
Spurwing Goose	*Plectropterus gabensis*	Secretarybird (VU)	*Sagittarius serpentarius*
Black-breasted Snake Eagle	*Circaetus pectoralis*	Steppe Buzzard	*Buteo buteo*

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
Lanner Falcon	*Falco biarmicus*	Greater Kestrel	*Falco rupicoloides*
Lesser Kestrel	*Falco naumanni*	Orange River Francolin	*Francolinus lavaillantoides*
Helmeted Guideafowl	*Numida meleagris*	Redknobbed Coot	*Fulica cristata*
Whitewinged Black Korhaan	*Eupodotis aftaoides*	Crowned Plover	*Vanellus coronatus*
Blacksmith Plover	*Vanellus armatus*	Common Sandpiper	*Actitis hypoleucos*
Blackwinged Stilt	*Himantopus himantopus*	Spotted Dikkop	*Birhinus capensis*
Doublebanded Courser	*Smutsornus africanus*	Temminck's Courser	*Cursorius temminickii*
Whitewinged Tern	*Chlidonias leucopterus*	Burchell's Sandgrouse	*Pterocles burchelli*

The following table lists the mammals that may occur at or around the mining footprint.

Table 8: Mammal list of species common at and around Kimberley Quarry

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
BATS			
Common slit-faced bat	*Nycteris thebaica*	Geoffroy's horseshoe bat	*Rhinolophus clivosus*
RODENTS AND SMALL MAMMALS			
Bushveld gerbil	*Tatera leucogaster*	Highveld gerbil	*Tatera brantsii*
Hairy-footed gerbil	*Gerbillurus paeba*	Short-tailed gerbil	*Desmodillus auricularis*
Domestic mouse	*Mus musculus*	Striped fieldmouse	*Rhabdomys pumilio*
Pouched mouse	*Saccostomus campestris*	Large-eared mouse	*Malacothrix typica*
Spectacled dormouse	*Graphiurus ocularis*	Pygmy mouse	*Mus minutoides*
Namaqua rock mouse	*Aethomys namaquensis*	Bronts' whistling rat	*Parotomys brantsii*
Karoo bush rat	*Otomys unisulcatus*	Black-tailed tree rat	*Thallomys nigricauda*
Common mole rat	*Cryptomys hottentotus*	Domestic rat	*Rattus rattus*
Cape hare	*Lepus capensis*	Shrub hare	*Lepus saxatilis*
Springhare	*Pedetes capensis*	Smith's red rock rabbit	*Pronolagus rupestris*
Dwarf mongoose	*Helogale parvula*	Yellow mongoose	*Cynictis penicillata*
Water mongoose	*Atilax paludinosus*	Slender mongoose	*Galerella sanguinea*
Striped polecat	*Cynictis cristata*	Small spotted genet	*Genetta genetta*
Ground squirrel	*Xerus inauris*	Striped ground squirrel	*Funisciurus congicus*
Cape hedgehog	*Atelerix frontalis*	Vervet Monkey	*Chlorocebus pygerythrus*
Aardvark	*Orycteropus after*	Porcupine	*Hystrix africaeaustralis*
Cape Pangolin (VU)	*Manis temminckii*	Warthog	*Phacochoerus aethiopicus*
Common Duiker	*Sylvicapra grimmia*	Meerkat	*Suricata suricatta*
Impala	*Aepyceros melampus*	Steenbok	*Raphicerus campestris*

Of the species listed above, only the Secretarybird (*Sagittarius serpentarius*) and the Cape Pangolin (*Manus temminckii*) are classified as Vulnerable on the IUCN Red List. The Cape Pangolin is highly elusive and tends to avoid areas with significant human activity. Similarly, the Secretarybird prefers open habitats with short grass and generally avoids densely wooded areas and regions disturbed by human presence. As such, the likelihood of these species occurring within the active mining area is very low.

Furthermore, the Quarry has been operational for at least the past 40 years, and the faunal component has therefore become accustomed to the mining operations. No endangered and/or protected species reside within the active mining area that warrants special consideration.

i) CULTURAL AND HERITAGE ENVIRONMENT

Site management confirmed that there are no sites of archaeological or cultural importance within the mining area. The local community also did not identify any site of historical importance, and to date no complaints with regard to the impact of the mine on surrounding land uses of cultural/heritage concern has been received.

j) SOCIO-ECONOMIC ENVIRONMENT

The Sol Plaatje Local Municipality, situated within the Frances Baard District of the Northern Cape Province, encompasses the city of Kimberley and its surrounding areas. Named after Solomon Tshekisho Plaatje, a notable South African intellectual and political figure, the municipality spans approximately 3,145 km² and comprises 33 wards. Kimberley Quarry is within Ward 26 of the SPLM.

Demographics

As of the 2022 census, the municipality's population stands at 270 078, reflecting a modest annual growth rate of 0.83%. The age distribution indicates a youthful demographic, with 26.5% under 15 years, 66.8% between 15 and 64 years, and 6.7% aged 65 and above. The racial composition is predominantly Black African (62%), followed by Coloured (27.9%), White (8.7%), and Indian/Asian (1.3%). Afrikaans is the most spoken first language (45.2%), succeeded by Setswana (33.2%), English (8%), and isiXhosa (5.6%) .

Economy

The municipality's economy is primarily driven by the tertiary sector, with community services (33%), finance (24%), and trade (14%) being the leading contributors. Mining, historically significant due to Kimberley's diamond heritage, now accounts for approximately 8% of the local economy.

Infrastructure and Services

Sol Plaatje boasts relatively high levels of basic service delivery. As of recent data, 86.9% of households have flush toilets connected to sewerage systems, 83.1% benefit from weekly refuse removal, 66.6% have piped water inside their dwellings, and 91.7% use electricity for lighting.

Challenges

Despite its strengths, the municipality faces financial challenges. In November 2024, it was downgraded to a Grade 4 municipality due to escalating debts, including over R1 billion owed to Eskom. This reclassification necessitated salary adjustments for officials and councillors and may impact service delivery and development projects.

Kimberley Quarry

As mentioned earlier, the permanent employees of Kimberly Quarry resides mainly in Kimberley and Richie from where they are daily transported to the mine. The mine also contribute to the local economy of the area, both directly and through the multiplier effect that its presence creates. Equipment and supplies are purchased locally, and wages are spent at local businesses, generating both jobs and income in the area. In addition thereto the implementation of the Social and Labour Plan obligations contribute positively to the socio-economic environment of the local community.

The product of the Quarry is principally consumed by the following users:

- Θ Construction industry for concrete products,
- Θ Roads industry for asphalt development,
- Θ Transnet for ballast rock,
- Θ Brick making industry.

k) LAND USE

As previously mentioned, the Kimberley Quarry has been operational for many years, with the southern (mining) portion of the farm fenced off from the northern section, which is managed as a game farm. The farm Spijt Fontein, where the quarry is located, is bordered on the west by the main railway line between Kimberley and De Aar. This railway runs parallel to the N12 national road, which connects Kimberley to Hopetown. Kimberley Airport is situated ±3.5 km north-east of the quarry, and the surrounding land is primarily used for agricultural activities.

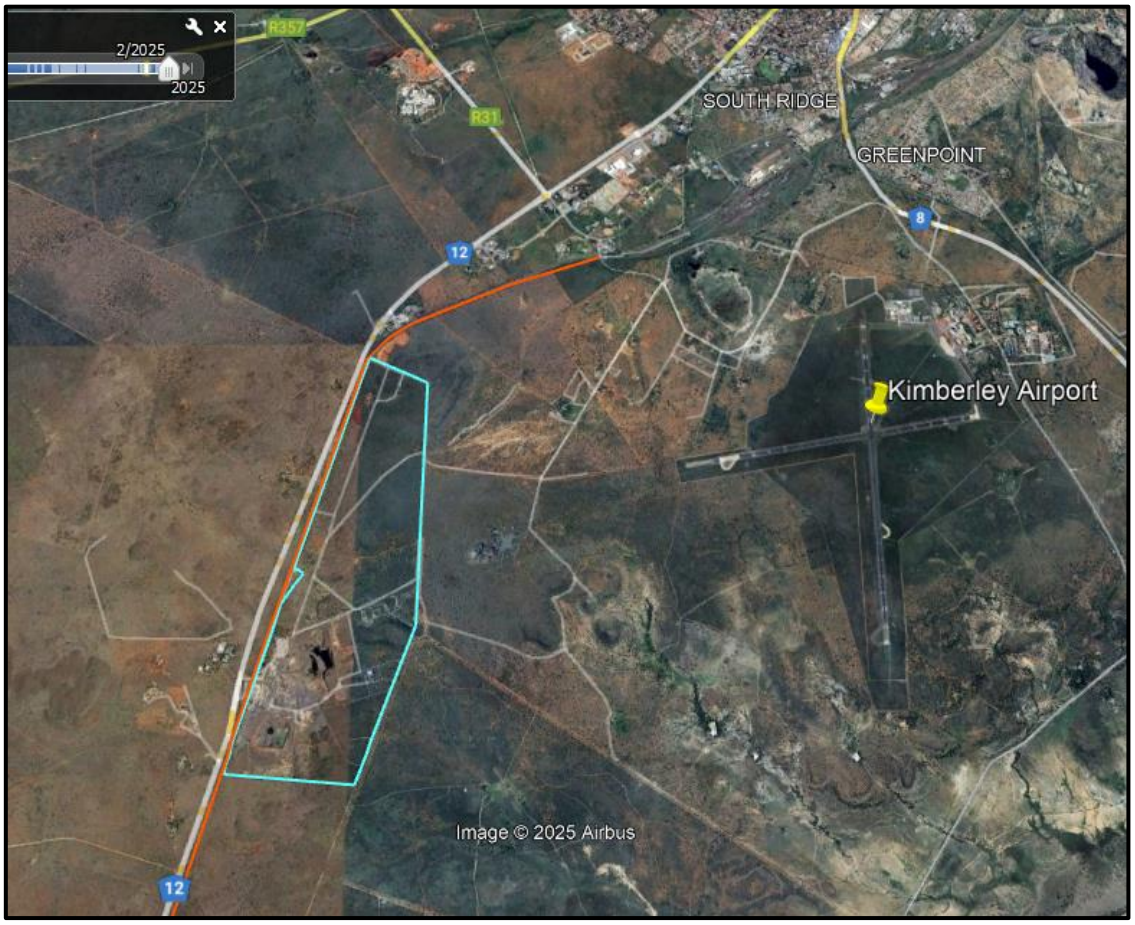

Figure 11: Satellite view of the mining area (blue polygon) in relation to the surrounding land uses. The red line indicates the nearby railway line running parallel with the N12 (image obtained from Google Earth).

The following table provides a description of the land uses and/or prominent features that currently occur at or within a 500 m radius of the earmarked area:

Table 9: Land uses and/or prominent features that occur at or within 500 m radius of the mining area.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The mining area is surrounded by natural areas used for agricultural purposes.
Low density residential	-	**NO**	-
Medium density residential	-	**NO**	-
High density residential	-	**NO**	-
Informal residential	-	**NO**	-
Retail commercial & warehousing	-	**NO**	-
Light industrial	-	**NO**	-
Medium industrial	-	**NO**	-
Heavy industrial	-	**NO**	-
Power station	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
High voltage power line	**YES**	-	A high voltage power line connects to the Eskom substation in the south-western corner of the mining area and borders the Quarry along the southern boundary. A 11kV power line also borders the Quarry boundary to the west.
Office/consulting room	-	**NO**	-
Military or police base / station / compound	-	**NO**	-
Spoil heap or slimes dam	**YES**	-	Various waste rock/overburden dumps occur within the mining footprint.
Quarry, sand or borrow pit	**YES**	-	The mining area has two quarry pits.
Dam or reservoir	**YES**	-	Farm dams occur on the property and surrounding farms.
Hospital/medical centre	-	**NO**	-
School/ crèche	-	**NO**	-
Tertiary education facility	-	**NO**	-
Church	-	**NO**	-
Old age home	-	**NO**	-
Sewage treatment plant	-	**NO**	-
Train station or shunting yard	-	**NO**	-
Railway line	**YES**	-	The Kimberley – De Aar railway line pass the western boundary of the mining area.
Major road (4 lanes or more)	-	**NO**	The N12 that borders the site to the west only has 2 lanes.
Airport	-	**NO**	Kimberley Airport is ±3.5 km to the north-east.
Harbour	-	**NO**	-
Sport facilities	-	**NO**	-
Golf course	-	**NO**	-
Polo fields	-	**NO**	-
Filling station	-	**NO**	-
Landfill or waste treatment site	-	**NO**	-
Plantation	-	**NO**	-
Agriculture	**YES**	-	The mine is situated within an area mainly used for grazing of livestock. A bird farm use to be operated ±359 m west of the nearest boundary of the Quarry.
River, stream, or wetland	-	**NO**	Although various drainage lines occur within 500 m of the mining area, no major rivers or wetlands are present.
Nature conservation area	-	**NO**	-
Mountain, hill, or ridge	**YES**	-	The topography of the area is undulating, and various ridges occur in the area.
Museum	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
Historical building	-	**NO**	-
Protected Area	-	**NO**	-
Graveyard	-	**NO**	-
Archaeological site	-	**NO**	-
Other land uses (describe)	-	**NO**	-

(APPENDIX 4 SECTION 1(1)(d))

G. DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS

a) IMPACTS AND RISKS ASSOCIATED WITH THE PROJECT

The table below presents the potential positive and negative environmental impacts associated with this project, identified for each main activity and applicable project phase (operational and decommissioning). This EMPR does not elaborate on the planning-, site establishment- and or construction phases as this is an operational Quarry and these phases are no longer applicable. Refer also to Appendix C for the Environmental Impact Statement.

It should be noted that the impacts listed have not been reassessed in detail, as no significant changes or additions to the mining activities have been identified that were not already assessed during the mining right application process and subsequently approved by the DMRE.

Accordingly, Table 10 provides a summary of the relevant impacts that may arise during the operational and/or decommissioning phases of the project, along with an updated and project-specific list of mitigation and management measures to be implemented on site. For details on compliance monitoring and performance assessment, please refer to the section titled *Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including headings (l)–(m)* as required by Appendix 4 of the EIA Regulations (GNR 982 of 2014) (as amended).

Table 10: Positive and negative impacts associated with the project proposal.

ACTIVITY	PHASE	ENVIRONMENTAL RECEPTOR	IMPACT DESCRIPTION	POTENTIAL IMPACT
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Operational Phase Θ Decommissioning Phase	Θ Visual aspects	Θ The processing plant, buildings and stockpiles have a negative impact from the N12, while the quarry has a negative impact from the immediate adjacent areas.	Θ Visual intrusion because of the activities.
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Operational Phase Θ Decommissioning Phase	Θ Air quality	Θ The greatest environmental impact from the mining operations is dust emissions into the atmosphere.	Θ Dust nuisance due to the movement of the soil. Θ Dust nuisance caused by blasting activities. Θ Dust nuisance caused by earthmoving machinery and mining related vehicles.
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting.	Θ Operational Phase	Θ Noise	Θ Noise generation from operations affecting communities in the area.	Θ Noise nuisance caused by earthmoving machinery and mining related vehicles.

ACTIVITY	PHASE	ENVIRONMENTAL RECEPTOR	IMPACT DESCRIPTION	POTENTIAL IMPACT
Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Decommissioning Phase			Θ Noise nuisance caused by blasting activities. Θ Noise nuisance because of the mining activities.
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Operational Phase Θ Decommissioning Phase	Θ Surface water	Θ Potential for pollution of surface water.	Θ Potential contamination of footprint area and surface runoff because of hydrocarbon spillages. Θ Soil contamination from hydrocarbon spills and/or littering. Θ Potential impact associated with litter/hydrocarbon spills left at the mining area (after closure).
	Θ Operational Phase Θ Decommissioning Phase	Θ Groundwater	Θ Pollution of groundwater resources through mining operations.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Operational Phase Θ Decommissioning Phase	Θ Vegetation	Θ The vegetation layer in the mining tenement is permanently impacted on through removal, disturbance, or the impact that invasive and/or alien plant species may have.	Θ Loss of vegetation cover. Θ Potential impact on faunal species. Θ Infestation of the topsoil heaps and mining area with invasive and/or alien plant species. Θ Infestation of the reinstated area with invasive and/or alien plant.
	Θ Operational Phase	Θ Fauna	Θ Destruction of habitat and disturbance due to mining operations will negatively	

ACTIVITY	PHASE	ENVIRONMENTAL RECEPTOR	IMPACT DESCRIPTION	POTENTIAL IMPACT
	Θ Decommissioning Phase		impact on the faunal population of the mining area.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Operational Phase Θ Decommissioning Phase	Θ Geology	Θ The operations will permanently alter the surface and sub-surface geology.	Θ Alteration of the existing topography. Θ Potential increase in runoff from denuded areas and associated erosion. Θ Erosion of returned topsoil after rehabilitation.
	Θ Operational Phase Θ Decommissioning Phase	Θ Topography	Θ The excavations will have a permanent impact on the topography. Θ The mine infrastructure surface area and stockpiles will be rehabilitated to reflect the surrounding topography.	
	Θ Operational Phase Θ Decommissioning Phase	Θ Soils	Θ The removal of topsoil and the impact of mine infrastructure may destroy the soil integrity of the area.	
	Θ Operational Phase Θ Decommissioning Phase	Θ Land capability and use	Θ Mining operations alter natural use. During the life of mine no additional uses for the land is possible	

ACTIVITY	PHASE	ENVIRONMENTAL RECEPTOR	IMPACT DESCRIPTION	POTENTIAL IMPACT
			thereby diminishing its productive capacity.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Operational Phase	Θ Socio-economic aspects	Θ The continuation of the mining operations will not only create wealth for the local communities and towns through job opportunities but also for the region as a whole through direct and indirect taxation. (Positive Impact) Θ The Quarry has a positive effect on the socio-economic structure in the area since valuable materials are supplied to the building and construction areas in and around Kimberley. (Positive Impact) Θ The Quarry further contribute to the community through the implementation of the Social and Labour Plan (SLP). (Positive Impact)	

b) IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

Table 11: Impacts to be mitigated in their respective phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Visual Characteristic</u> Θ The site must always have a neat appearance and be kept in good condition. Θ Mining equipment must be stored neatly in dedicated areas when not in use. Θ The right holder must limit vegetation removal, and stripping of topsoil may only be done immediately prior to the mining/use of a specific area. Θ All excavation and mining related activities must be contained within the approved mining footprint. Θ Upon closure the site must be rehabilitated to ensure that the visual impact on the aesthetic value of the area is reduced to the minimum. Θ All buildings, equipment and/or infrastructure that will remain on the property after closure, must be left in a good and functional condition, and the landowner must accept responsibility for these structures in writing.	Management of the activities must be in accordance with the: Θ MPRDA, 2008 Θ NEMA, 1998	Throughout the operational- and decommissioning phases.
Θ Stripping and stockpiling of topsoil and/or overburden.	Operational & Decommissioning Phase	±172 ha	<u>Dust Management</u> Θ The liberation of dust into the surrounding environment must be effectively controlled using, inter alia, water	Dust generation on site must be managed in accordance with the: Θ NEM:AQA, 2004 Regulation 6(1)	Throughout the operational- and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.			spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). Θ Dust suppression must continue during day and night shifts. Θ Water sprayers must be fitted to the processing plant, and the plant may not operate if these sprayers are out of order. Θ The site manager must daily assess the efficiency of all dust suppression equipment. Θ Excess dust and fines must at least weekly be removed from the processing area. Θ Speed on the haul roads must be limited to 20 km/h to prevent the generation of excess dust. Θ Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to mining. Θ Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts. Θ All dust generating activities shall comply with the National Dust Control Regulations, (GN No R827) under NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012). Θ Best practice measures shall be implemented during the stripping of topsoil, excavation, and transporting of material from site to minimize potential dust impacts. Θ Monthly fallout-dust monitoring must be implemented at the site for the duration of the activities and the results must be compliant with the standards of the	Θ National Dust Control Regulations, GN No R827 Θ ASTM D1739 (SANS 1137:2012)	

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			National Dust Control Regulations, 2013 (as amended).		
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Noise Management</u> Θ No loud music may be permitted at the work areas. Θ The type, duration and timing of the blasting procedures must be planned with due cognizance of other land users and structures in the vicinity. Surrounding landowners must be notified in writing prior to each blast. Θ A qualified occupational hygienist must be contracted to quarterly monitor and report on the personal noise exposure of the employees working at the mine. The monitoring must be done in accordance with the SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA, 2004, SANS 10103:2008. Θ The monitoring of noise pollution during night shift must form part of the noise monitoring regime of the Quarry. If the noise pollution exceed acceptable limits (according to the monitoring specialist) corrective measures must be implemented within one month. Θ Best practice measures shall be implemented to minimize potential noise impacts.	Noise generation on site must be managed in accordance with the: Θ NEM:AQA, 2004 Regulation 6(1) Θ NRTA, 1996	Throughout the operational and decommissioning phase.
Θ Stripping and stockpiling of topsoil and/or overburden.	Operational & Decommissioning Phase	±172 ha	<u>Waste Management</u> Θ Regular vehicle maintenance, repairs and services may only take place at the workshop and service area. If emergency repairs are needed on equipment not	Project related waste must be managed in accordance with the: Θ NWA, 1998 Θ NEM:WA, 2008	Throughout the operational and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.			able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal. This waste must be treated as hazardous waste and must be disposed of at a licenced hazardous waste handling facility, alternatively collected by a registered hazardous waste handling contractor. The safe disposal certificates must be filed for auditing purposes. Θ If a diesel bowser is used on site, it must always be equipped with a drip tray and/or parked in a bunded area with impermeable surface. Drip trays must be used during each refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. Θ Ablution facilities must be provided to all employees. The ablution facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage. Any pollution problems arising from the above are to be addressed immediately by the MR Holder. Θ Site management must ensure drip trays are cleaned after use. The dirty rags used to clean the drip trays must be disposed as hazardous waste into a designated bin at the workshop, where it is incorporated into the hazardous waste removal system.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Θ Equipment/tools/vehicles placed in the salvage yard must be drained of all hydrocarbons before placement. The salvage yard must be kept clean and unwanted materials must be removed from the mine as regular as possible. Θ An oil spill kit/s must be available at the mine, and the employees must be trained in the emergency procedures to follow when a spill occurs as well as the application of the spill kit/s. Θ Spills must be cleaned up immediately, within two hours of occurrence, by removing the spillage together with the polluted soil and containing it in a designated hazardous waste bin until it is disposed of at a licenced facility. Proof must be filed. Θ When small volumes of wastewater are generated during the life of the project the following is applicable: ▪ Water containing waste must not be discharged into the natural environment. ▪ Measures to contain the wastewater and safely dispose thereof must be implemented. Θ It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the activities is reported to the Department of Water and Sanitation and other relevant authorities. Θ All decommissioned/rehabilitated areas must be cleared of all waste at the end of the project.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Storage / Handling of Hazardous Substances / Chemicals</u> Θ All chemical stores must: ▪ Be situated on level, impermeable surfaces with secondary containment (bunding). ▪ Have a capacity to contain at least 110% of the largest stored volume, per SANS 10228. ▪ Have access to a spill kit and staff must be trained in the emergency response procedures. Θ Access to the chemicals/substances must be controlled and require prior notification of an appropriate staff member. Θ A Hazardous Substances Register must be maintained, and Safety Data Sheets (SDS) must be kept current for all chemicals used on site. Θ Any fuel/used oil tanks and/or generators must have secondary containment in the form of an impermeable bund wall and base within which the tanks sits, raised above the floor, on plinths. The bund capacity must be sufficient to contain 110% of the tank's maximum capacity. Θ The outlet valve/s of all bunded areas must always be kept closed. Θ The site manager must establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. The bund area must be inspected at least weekly and any accumulated rainwater removed and handled as	Project related chemicals/products must be managed in accordance with the: Θ HSA, 1973	Throughout the operational and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			contaminated water. All valves and outlets must be checked to ensure that its intact and closed securely. Θ The base of the bunded area must be sloped to direct runoff towards an appropriately sized oil sump. Contaminated water must be prevented from mixing with clean water and must be contained until it can be collected by a licenced hazardous waste handling contractor or disposed of at a licensed hazardous waste facility. Reuse of this water on site is only permitted if verified proof is available confirming that it is free of hydrocarbons. Θ Drip trays must be used underneath all stationary equipment or vehicles. Used drip trays must be placed within a bunded area and may not be stored on bare soil. The waste water originating from the cleaning of drip trays must be discarded into the oil sump, alternatively removed by the hazardous waste handling contractor. Θ No mining equipment and/or vehicles may be washed on the bare ground. Washing must be done at a formal wash bay with impermeable surface that drains to an operational oil sump. Reuse of the water from the sump is only permitted if verified proof is available confirming that it is free of hydrocarbons.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Terrestrial Biodiversity and Groundcover – Management of Vegetation</u> Θ The mining boundaries must be clearly demarcated, and all operations must be contained to the approved mining area. The area outside the mining boundaries must be declared a no-go area, and all staff must be educated accordingly. Θ The Right Holder must be committed to a conservation approach and the actual footprint of disturbance must be kept to a minimum. Θ Environmental induction must be arranged for all site staff to ensure that basic environmental principles are adhered to. This includes awareness of littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimising wildlife interactions, remaining within demarcated areas, etc. Θ Cleared vegetation must be retained and may not be burned but can be mulched and stockpiled. Ideally the heaps can be covered with stockpiled topsoil and the material be retained for future site rehabilitation purposes. Θ The ECO must provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment. Θ All vehicles must remain on demarcated roads and no unnecessary driving in the veld outside these areas may be allowed.	Natural vegetated areas must be managed in accordance with the: ❖ NEM:BA 2004	Throughout the operational- and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Θ No open fires outside designated areas may be allowed on-site. Θ Spoil heaps and topsoil stockpiles must be provided with a vegetation cover of indigenous grasses. Θ All newly vegetated areas must be protected against grazing by domestic animals. Θ Monitoring of the rehabilitated area/s must take place every six months until mine closure, or for at least one growth season after closure. Photos must be taken at fixed points and must be available for auditing purposes.		
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Terrestrial Biodiversity and Ground Cover – Management of Invasive Plant Species</u> Θ An invasive plant species management plan (Appendix E) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Invasive and/or alien plant species clearing must be done on an ongoing basis throughout the life of the activities. Θ No planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose may be allowed. Θ All stockpiles (topsoil & overburden) must be kept free of invasive plant species.	Invasive and/or alien plant species on site must be managed in accordance with the: Θ CARA, 1983 Θ NEM:BA, 2004	Throughout the operational- and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Θ Management must take responsibility to control declared invasive and/or alien plant species on the rehabilitated areas. The following control methods can be used: ▪ The plants can be uprooted, felled, or cut off and can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) using an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.		
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Fauna</u> Θ The site manager must ensure no fauna is caught, killed, harmed, sold, or played with. Θ Any fauna directly threatened by the operational activities must be removed to a safe location by the ECO or other suitably qualified person. Θ The handling and relocation of any animal perceived to be dangerous/venomous/poisonous must be undertaken by a suitably trained individual. Θ All personnel must undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Workers must be instructed to report any animals that may be trapped in the working area.	Fauna must be managed in accordance with the: ❖ NEM:BA 2004	Throughout the operational- and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Θ No snares may be set, or nests raided for eggs or young. Θ No litter, food or other foreign material may be thrown or left around the site. Such items must daily be removed to the site offices. Θ All excavations must include features (such as sloped edges or escape ramps) to ensure that any animals entering the area can exit safely.		
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Geology and Soil – Topsoil Management</u> Θ The upper 300 mm of the soil (if available) must be stripped and stockpiled before mining. Θ Topsoil is a valuable and essential resource for rehabilitation, and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes. Θ Topsoil stripping, stockpiling, and re-spreading must be done in a systematic way. The mining plan must be such that topsoil is stockpiled for the minimum possible time. Θ The topsoil must be placed on a levelled area, within the mining footprint. No topsoil may be stockpiled in undisturbed areas. All topsoil heaps must be signposted. Θ Topsoil stockpiles must be protected against losses by water- and wind erosion. The establishment of plants (indigenous grass) on the stockpiles will help to prevent erosion.	Stockpiles must be managed in accordance with the: ❖ CARA, 1983	Throughout the operational-, and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Θ Topsoil heaps may not exceed 2.5 m in height and are not to be sloped more than 1:2 to avoid collapse. Θ The topsoil stockpiles must be kept free of invasive plant species. Θ Topsoil heaps to be stored longer than a period of 3 months needs to be vegetated with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season. Θ Storm- and runoff water must be diverted around the topsoil and overburden stockpile areas to prevent erosion. Θ The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site. Θ The right holder must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal. Θ An indigenous grass layer must be planted and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. It is important that rehabilitation be taken up to the point of stabilization. Rehabilitation cannot be considered complete until the first grass layer is well established. Θ Run-off water must be controlled via temporary berms, where necessary, on the slopes to ensure that		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			accumulation of run-off does not cause down-slope erosion. Θ The rehabilitated area must be monitored for erosion and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.		
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Geology and Soil – Erosion Control and Storm Water Management</u> Θ A storm water management plan must be implemented for the duration of the mining activities. Θ Clearing of vegetation must be limited to the mining footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place. Θ Vegetation clearing activities must be put on hold when heavy rains are expected. Θ Clean stormwater must be diverted around the topsoil heaps and mining areas (if possible) to prevent erosion. Θ Stockpiles must be: ▪ Located on flat, stabilised areas away from drainage lines, ▪ Covered with vegetation to reduce wind and water erosion risks. Θ When mining within steep slopes, it must be ensured that adequate slope protection is provided. Θ Roads and other disturbed areas within the project area must be regularly monitored for erosion and	Soil must be managed in accordance with the: Θ CARA, 1983 Θ Closure Plan (Appendix D) Θ MPRDA, 2002 Θ NEM:BA, 2004 Θ NWA, 1998	Throughout the operational- and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			problem areas must receive follow-up monitoring to assess the success of the remediation. Θ Any erosion problems within the mining area because of the mining activities observed must be rectified immediately (within 48 hours) and monitored thereafter to ensure that it does not re-occur. Θ Mining must be conducted only in accordance with the Best Practice Guideline for small scale mining that relates to storm water management, erosion and sediment control and waste management, developed by the Department of Water and Sanitation (DWS), and any other conditions which that Department may impose: ▪ Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems. ▪ Dirty water must be collected and contained in a system separate from the clean water system. ▪ Dirty water must be prevented from spilling or seeping into clean water systems. Θ Once shaped, all exposed/bare surfaces and embankments must be re-vegetated immediately. If revegetation of exposed surfaces cannot take place immediately, temporary erosion, and sediment control measures must be installed and maintained until such time that revegetation can commence. Θ All erosion and sediment control measures must be monitored (weekly) for the life of the operation and		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			repaired immediately when damaged. The erosion and sediment control structures may only be removed once vegetation cover has successfully recolonised the affected areas. Θ After heavy rainfall events, site management must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled in with appropriate material and/or silt fences until vegetation has recolonised the rehabilitated area.		
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Hydrology</u> Θ All water uses applicable to the operation, as defined under the National Water Act (NWA), must be duly authorised by the Department of Water and Sanitation (DWS). A copy of the water use authorisation must be kept on-site and made available for inspection or auditing upon request. Θ Annual water quality monitoring must be conducted for the following: water within the quarry sump(s), runoff water in the duck pond, and water in the final tank of the oil sump. Any deviations from acceptable water quality standards that are attributable to mining activities must be addressed without delay. In addition, water from the oil separator must be tested specifically for the presence of hydrocarbons. Θ To prevent the contamination of the aquatic environment: ▪ The employees must notify site management immediately of any pollution incidents.	All hydrology matters must be managed in accordance with the: Θ NWA, 1998 Θ SWMP	Throughout the operational and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			▪ The contractor must prevent discharge of any pollutants, such as cement, concrete, lime chemicals and fuels into any natural areas. Θ During rehabilitation, the MR Holder must aim to restore surface water flow patterns to align with the natural drainage of the area, as far as is practically feasible.		
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational & Decommissioning Phase	±172 ha	<u>Health and Safety Risks</u> Θ Workers must have access to the correct personal protection equipment (PPE) as required by law. Θ The surrounding landowners must be informed in writing ahead of each blasting event. Θ The compliance of ground vibration and airblast levels must be monitored to USBM standards with each blasting event. Θ A vibro recorder must be used to record all blasts. Θ Audible warning of a pending blast must be given at least 3 minutes in advance of the blast. Θ Measures to limit flyrock must be taken. All flyrock (of diameter 150 mm and larger) which falls beyond the working area, together with the rock spill must be collected and removed. Θ Upon closure the entrance to the excavations must be blocked (soil berm / oversize rocks) to restrict access.	Health and safety aspects on site must be managed in accordance with the: Θ MHSA, 1996 Θ OHSA, 1993 Θ OHSAS 18001 Θ HSA,1973	Throughout the operational and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Θ Excavation, processing, loading and hauling of material.	Operational Phase	±172 ha	<u>Access Road Management</u> Θ Vehicular movement must be restricted to the roads and crisscrossing of tracks through undisturbed areas must be prohibited. Θ Rutting and erosion of the access and internal roads caused as a direct result of the mining activities must be repaired by the MR Holder. Θ Overloading of the trucks must be prevented, and proof of load weights must be filed for auditing purposes.	The access road must be managed in accordance with the: ❖ NRTA, 1996	Throughout the operational phase.
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Operational Phase	±172 ha	<u>Cultural and Heritage Environment</u> Θ All mining must be confined to the development footprint area. Θ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. Θ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. Θ The senior on-site Manager must inform the ECO of the chance find and its immediate impact on	Cultural/heritage aspects must be managed in accordance with the: ❖ NHRA, 1999	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the SAHRA. Θ Work may only continue once the go-ahead was issued by SAHRA. Θ Should any suspected palaeontological material be at any time encountered during mining, a palaeontologist should likewise be immediately contacted to sample and record such occurrence.		
Θ Sloping and landscaping during rehabilitation.	Decommissioning Phase	±172 ha	<u>Rehabilitation / Landscaping of the Mining Area</u> Θ When possible, excavations and/or disturbed areas must be subject to progressive rehabilitation. Θ Rehabilitation must be done to such a standard that the rehabilitated land surrounding the excavations can revert to grazing. Θ The excavated areas must serve as a final depositing area for the placement of overburden. Θ Rocks and coarse material removed from the excavations must be returned to the excavations. Θ Coarse natural material used for the construction of ramps must be removed and dumped into the excavations. Θ Stockpiles must be removed during the decommissioning phase, the area ripped, and the topsoil returned to its original depth to provide a growth medium. Θ No waste may be permitted to be deposited in the excavations.	The mining area must be managed in accordance with the: Θ MPRDA, 2002	Throughout the decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			Θ Once overburden, rocks and coarse natural materials have been added to the excavations and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area. Θ The site shall be seeded with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within six months from closure of the site. Θ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining operation be corrected and the area be seeded with a vegetation seed mix to his or her specification. Θ Rehabilitation success must be measured by: ▪ At least 70% vegetation cover with indigenous grass species within 12 months of seeding. ▪ Stabilization of slopes to a gradient of 1:3 to prevent erosion. ▪ Regular monitoring for invasive species, with removal interventions implemented quarterly. Θ The entrances to both quarry pits must be adequately blocked to prevent unauthorised access to humans and domestic animals.		

c) ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

Copies of this EMPR must be kept at the site office and must be distributed to all senior contract personnel who shall familiarise themselves with its contents. The implementation of the EMPR requires the involvement of all site personnel (including the brick and block-making yard and sub-contractors), to ensure sound environmental management during the operational and decommissioning phases of the project.

1. MINING RIGHT HOLDER

The mining right holder, OMV Kimberley Mining (Pty) Ltd, and anyone acting on behalf of the MR Holder, is accountable for the potential environmental impacts of all activities undertaken and is responsible for the management of the impacts as well as the implementation of the EMPR.

2. SUB-CONTRACTORS

The sub-contractors must all receive a copy of the EMPR and be inducted by the MR Holder's representative prior to commencement on site. All sub-contractors that enter the mining area must comply with the requirements of the EMPR and ensure compliance of his/her employees.

3. ENVIRONMENTAL CONTROL OFFICER (ECO)

The holder of the mining right must appoint a site based environmental control officer. The ECO must be readily available on site at all times to ensure that all activities are conducted in compliance with the approved EMPR.

The ECO must:

- Keep and maintain a detailed incident register (including any spillages or fuel, chemicals and any other materials).
- Keep a complaints register on site indicating the complaint and how the issues were addressed, what measures were taken and what preventative measures were implemented to avoid re-occurrence of complaints.
- Keep records relating to monitoring and auditing and site and avail them for inspection to any relevant authorised officials.
- Keep copies of all environmental reports submitted to the DMRE.
- Keep the records of all permits, licenses and authorisations required by the operation.
- Compile a monthly monitoring report and make it available to the DMRE if requested.

- The duties and responsibility of the ECO must not be seen as exempting the holder of the mining right from the legal obligations in terms of the MPRDA and/or NEMA.

4. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The holder of the mining right must annually appoint an independent environmental specialist (EAP) to objectively assess the compliance of the mining operations with the conditions of the approved EMPR. The EAP must at least annually report on the compliance of the mine to the DMRE, unless otherwise stipulated by the department.

(APPENDIX 4 SECTION 1(1)(e) & (f))

H. IMPACT MANAGEMENT ACTIONS AND OUTCOMES

Table 12: Impact Management Actions and Outcomes.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	Θ Visual intrusion because of the activities.	The visual impact may affect the aesthetics of the landscape.	Operational and Decommissioning Phase	Control: Implementing proper housekeeping and progressive rehabilitation (where possible).	Management of the activities must be in accordance with the: Θ MPRDA, 2008 Θ NEMA, 1998
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material.	Θ Dust nuisance due to the movement of the soil. Θ Dust nuisance caused by blasting activities. Θ Dust nuisance caused by earthmoving machinery and mining related vehicles.	Increased dust generation will impact on the air quality of the receiving environment.	Operational and Decommissioning Phase	Control: Dust suppression methods and proper housekeeping.	Dust generation on site must be managed in accordance with the: Θ NEM:AQA, 2004 Regulation 6(1) Θ National Dust Control Regulations, GN No R827 Θ ASTM D1739 (SANS 1137:2012)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Θ Sloping and landscaping during rehabilitation.					
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of aggregate.	Θ Noise nuisance caused by earthmoving machinery and mining related vehicles. Θ Noise nuisance caused by blasting activities. Θ Noise nuisance because of the mining activities.	Should noise levels become excessive it may have an impact on the noise ambiance of the receiving environment.	Operational and Decommissioning Phase	<u>Control:</u> Noise suppression methods and proper housekeeping.	Noise generation on site must be managed in accordance with the: Θ NEM:AQA, 2004 Regulation 6(1) Θ NRTA, 1996
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	Θ Potential contamination from footprint area and surface runoff because of hydrocarbon spillages. Θ Soil contamination from hydrocarbon spills and/or littering. Θ Potential impact associated with litter/hydrocarbon spills left at the mining area (after closure).	Contamination of the footprint areas will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the Right Holder.	Operational and Decommissioning Phase	<u>Control & Remedy:</u> Proper housekeeping and implementation of an emergency response plan and waste management plan.	Project related waste must be managed in accordance with the: Θ NWA, 1998 Θ NEM:WA, 2008

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Θ Stripping and stockpiling of topsoil and/or overburden.	Θ Loss of vegetation cover.	This will impact on the biodiversity of the receiving environment.	Operational and Decommissioning Phase	Control: Implementing proper housekeeping and the mitigation measures.	Natural vegetated areas must be managed in accordance with the: Θ NEM:BA 2004
Θ Stripping and stockpiling of topsoil and/or overburden.	Θ Potential impact on faunal species.	This will impact on the biodiversity of the receiving environment.	Operational and Decommissioning Phase	Control: Implementing proper housekeeping and the mitigation measures.	Fauna must be managed in accordance with the: ❖ NEM:BA 2004
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	Θ Infestation of the topsoil heaps and mining area with invasive and/or alien plant species. Θ Infestation of the reinstated area with invasive and/or alien plant species.	Infestation of the footprint by invasive and/or alien plant species may affect the biodiversity of the receiving environment.	Operational and Decommissioning Phase	Control & Remedy: Implementation of an invasive plant species management plan.	Invasive and/or alien plant species on site must be managed in accordance with the: Θ CARA, 1983 Θ NEM:BA, 2004
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of aggregate.	Θ Potential increase in runoff from denuded areas and associated erosion. Θ Erosion of returned topsoil after rehabilitation.	This could impact the hydrology of the receiving environment and cause erosion.	Operational and Decommissioning Phase	Control: Implementing a SWMP.	Soil must be managed in accordance with the: Θ CARA, 1983 Θ Closure Plan (Appendix D) Θ MPRDA, 2002 Θ NEM:BA, 2004 Θ NWA, 1998

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Θ Sloping and landscaping during rehabilitation.					
Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of aggregate.	Θ Alteration of the existing topography.	This impact may affect the land use opportunities of the property.	Operational and Decommissioning Phase	The operation of the mine do affect the land use options of the property. The impact can be controlled to a certain extend through progressive rehabilitation.	The mining area must be managed in accordance with the: Θ MPRDA, 2002
Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	Θ Health and safety risk posed by blasting activities. Θ Unsafe working environment for employees. Θ Health and safety risk posed by unrehabilitated quarry excavations.	An unsafe working environment affects the labour force, as well as pose a threat to animals and humans that may enter the mining footprint.	Operational, and Decommissioning Phase	<u>Stop & Control:</u> Adherance to the blasting rules and regulations, demarcation of the mining area and proper housekeeping.	Health and safety aspects on site must be managed in accordance with the: Θ MHSA, 1996 Θ OHSA, 1993 Θ OHSAS 18001 Θ HSA,1973
Θ Excavation, processing, loading and hauling of aggregate.	Θ Overloading of trucks having an impact on the public roads.	Impacting the condition of public roads may incur public complaints and additional costs to the MR Holder.	Operational Phase	<u>Operational and Expansion Activities:</u> Excavation, processing, loading and hauling of aggregate.	The access road must be managed in accordance with the: Θ NRTA, 1996

(APPENDIX 4 SECTION 1(1)(g) – (k))

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

I. MONITORING OF IMPACT MANAGEMENT ACTIONS

J. MONITORING AND REPORTING FREQUENCY

K. RESPONSIBLE PERSONS

L. TIME PERIOD FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS

M. MECHANISMS FOR MONITORING COMPLIANCE

Table 13: Mechanisms for monitoring compliance with and performance assessment against the EMPR and reporting thereon.

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
Θ Demarcation of site with visible beacons.	<u>General</u> Θ Maintenance of beacons.	Θ Visible beacons / fences need to be established at the boundaries of the mining area.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent Environmental Assessment Practitioner (EPA) during the annual environmental audit.	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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
			<u>Mitigation / Monitoring to be Implemented:</u> Θ Ensure beacons / fences are in place throughout the life of the mine.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	<u>Visual Characteristics</u> Θ Visual intrusion because of the activities.	Θ Parking- and dedicated storage areas for equipment. Θ Good housekeeping practices.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Ensure that the site has a neat appearance and is always kept in good condition. Θ Store mining equipment neatly in dedicated areas when not in use. Θ Limit vegetation removal and only do stripping of topsoil immediately prior to the mining/use of a specific area. Θ Contain the excavation within the approved footprint of the permitted area. Θ Upon closure, rehabilitate the site and reduce the residual visual impacts to the minimum. Θ Leave all buildings, equipment and/or infrastructure that will remain on the property after closure in a good and functional condition and obtain written transfer of liability of the structures to the landowner.	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	<u>Air Quality and Noise Ambiance</u> Θ Dust nuisance due to the movement of soil. Θ Dust nuisance caused by blasting activities. Θ Dust nuisance caused by earthmoving machinery and mining related vehicles.	Θ Dust suppression equipment such as a water car, water dispenser and sprayers on the crusher plant. Θ Signage that clearly reduce the speed on the internal roads. Θ Maintenance schedule to remove excess dust from the processing area. Θ Cover crop to re-vegetate denuded areas.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Control the liberation of dust into the surrounding environment using; inter alia, water spraying and/or other dust-allaying agents. Θ Ensure dust suppression continue during day and night shifts. Θ Fit water sprayers to the processing plant and stop operations if the sprayers are out of order. Θ Ensure continuous (daily) assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. Θ Remove excess dust and fines at least weekly from the processing area. Θ Limit speed on the haul roads to 20 km/h to prevent the generation of excess dust. Θ Minimise areas devoid of vegetation and only remove vegetation immediately prior to mining.	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Weekly monitoring of dust and fines at the processing area. Θ Monthly fallout dust monitoring by qualified service provider. Θ Annual compliance monitoring by independent EAP.

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
			Θ Consider weather conditions upon commencement of daily operations. Limit operations during very windy periods to reduce airborne dust and resulting impacts. Θ Ensure dust generating activities comply with the National Dust Control Regulations, (GN No R827) under NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012). Θ Implement best practice measures during the stripping of topsoil, excavation, and transporting of material from site to minimize potential dust impacts. Θ Implement monthly fallout-dust monitoring at the site for the duration of the activities and ensure the results are compliant with the standards of the National Dust Control Regulations, 2013 (as amended).	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of aggregate.	<u>Air Quality and Noise Ambiance</u> Θ Noise nuisance caused by earthmoving machinery and mining related vehicles. Θ Noise nuisance caused by blasting activities.	Θ Personal noise exposure monitoring equipment. Θ Signage indicating noise zones.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Do not permit loud music at the mining area. Θ Plan the type, duration, and timing of the blasting procedures with due cognizance of other land users and structures in the vicinity. Notify the surrounding landowners in writing prior to each blasting occasion.	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Quarterly reporting by a qualified occupation hygienist. Θ Annual compliance monitoring by independent EAP.

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
	Θ Noise nuisance because of the mining activities.		Θ Contract a qualified occupational hygienist to quarterly monitor and report on the personal noise exposure of the employees working at the mine. Monitoring must be in accordance with SANS 10083:2004 (Edition 5) sampling method as well as NEM:AQA 2004, SANS 10103:2008. Θ Make the monitoring of noise pollution during night shift part of the noise monitoring regime of the Quarry. If the noise pollution exceed acceptable limits (according to the monitoring specialist) implement corrective actions within one month. Θ Implement best practice measures to minimise potential noise impacts.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	<u>Waste Management</u> Θ Potential contamination of footprint area and surface runoff because of hydrocarbon spillages. Θ Soil contamination from hydrocarbon spills and/or littering. Θ Potential impact associated with	Θ Waste management plan. Θ Formal waste disposal system with waste registers. Θ Drip trays. Θ Covered refuse bins for both hazardous- and general waste. Θ Oil spill kit. Θ Bunded areas with impermeable surface.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Ensure that regular vehicle maintenance, repairs and services only take place at the workshop and service area. If emergency repairs are needed on equipment not able to move to the workshop, ensure drip trays are present. Dispose all waste products in a closed container/bin and remove it from the emergency service area (same day) to the workshop to ensure proper	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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
	litter/hydrocarbon spills left at the mining area (after closure).	Θ Stormwater management plan.	disposal. Treat this waste as hazardous waste and disposed of it at a licenced hazardous waste handling facility, alternatively arrange collection by a registered hazardous waste handling contractor. File the safe disposal certificates for auditing purposes. Θ If a diesel bowser is used on site, always equip it with a drip tray and ensure that it is parked in a bunded area with impermeable surface. Use drip trays during each refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling. Θ Provide ablution facilities to all employees. Ensure that the ablution facilities do not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution may arise from the disposal of refuse or sewage. Any pollution problems arising from the above are to be addressed immediately by the MR Holder. Θ Ensure drip trays are cleaned after use. Dispose of dirty rags used to clean the drip trays as hazardous waste into a designated bin at the workshop, where it is incorporated into the hazardous waste removal system. Θ Drain hydrocarbons from equipment/tools/vehicles placed in the salvage yard. Keep the salvage yard clean and remove unwanted materials from the mine as regular as possible. Θ Obtain an oil spill kit/s and train the employees in the emergency procedures to follow when a spill occurs as well as the application of the spill kit/s.	

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			Θ Clean spills immediately, within two hours of occurrence by removing the spillage together with the polluted soil and containing it in a designated hazardous waste bin until it is disposed of at a registered facility. File proof. Θ Do not discharge water containing waste into the natural environment. Θ Implement measures to contain the wastewater and safely dispose thereof. Θ Report any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities to the Department of Water and Sanitation and other relevant authorities. Θ Clean all decommissioned / rehabilitated areas of all waste at the end of the project.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	<u>Storage / Handling of Hazardous Substances / Chemicals</u> Θ Potential contamination of footprint area and surface runoff because of hydrocarbon spillages.	Θ Waste management plan. Θ Formal waste disposal system with waste registers. Θ Drip trays. Θ Covered refuse bins for both hazardous- and general waste. Θ Oil spill kit.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Ensure that all chemical stores: ▪ Are situated on level, impermeable surfaces with secondary containment (bunding). ▪ have a capacity to contain at least 110% of the largest stored volume, per SANS 10228.	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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	Θ Soil contamination from hydrocarbon spills and/or littering. Θ Potential impact associated with litter/hydrocarbon spills left at the mining area (after closure).	Θ Bunded areas with impermeable surface. Θ Safety Data Sheets Θ Formal inspection routine/programme.	▪ Have access to a spill kit and staff must be trained in the emergency response procedures. Θ Control access to the chemicals/substances and require prior notification of an appropriate staff member. Θ Maintain a Hazardous Substances Register and keep the Safety Data Sheets (SDS) current for all chemicals used on site. Θ Ensure all fuel/used oil tanks and/or generators have secondary containment in the form of an impermeable bund wall and base within which the tanks sits, raised above the floor, on plinths. The bund capacity must be sufficient to contain 110% of the tank's maximum capacity. Θ Ensure that the outlet valve/s of all bunded areas are always kept closed. Θ Establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. Inspect the bund area at least weekly and remove any accumulated rainwater. Handle as contaminated water. Check all valves and outlets to ensure that its intact and closed securely. Θ Slope the base of the bunded area to direct runoff towards an appropriately sized oil sump. Prevent contaminated water from mixing with clean water and contained it until collected by a registered hazardous waste handling contractor or disposed of at a licensed hazardous waste facility. Only reuse this water on site if	

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			verified proof is available confirming that it is free of hydrocarbons. Θ Use drip trays underneath all stationary equipment or vehicles. Used drip trays must be placed within a bunded area and may not be stored on bare soil. The waste water originating from the cleaning of drip trays must be discarded into the oil sump, alternatively removed by the hazardous waste handling contractor. Θ Do not wash mining equipment and/or vehicles on the bare ground. Washing must be done at a formal wash bay with impermeable surface that drains to an operational oil sump. Only reuse the water from the sump if verified proof is available confirming that it is free of hydrocarbons.	
Θ Stripping and stockpiling of topsoil and/or overburden.	<u>Terrestrial biodiversity, and groundcover</u> Θ Loss of vegetation cover.	Θ Visible beacons / fences indicating the boundary of the mineable areas. Θ Environmental awareness training material. Θ Fire management plan. Θ Alien invasive species management plan.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Clearly demarcate the mining boundaries and contain all operations to the approved mining area. Declare the area outside the mining boundaries a no-go area and educate all staff accordingly.	Applicable throughout and operational phase. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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		Θ Cover crop to seed rehabilitated areas.	Θ Commit to a conservation approach and keep the actual footprint of disturbance to a minimum. Θ Arrange environmental induction for all staff on site to ensure that basic environmental principles are adhered to. This must include awareness of littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimising wildlife interactions, remaining within demarcated areas, etc. Θ Do not burn cleared vegetation but rather mulch and stockpiled it. Ideally cover the heaps with stockpiled topsoil and retain the material for future site rehabilitation. Θ Arrange that the ECO provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment. Θ Ensure all vehicles remain on demarcated roads and prevent unnecessary driving in the veld outside these areas. Θ Do not allow open fires outside designated areas. Θ Provide spoil heaps and topsoil stockpiles with a vegetation cover of indigenous grasses. Θ Protect all newly vegetated areas against grazing by domestic animals. Θ Monitor the rehabilitated area/s every six months until mine closure, or for at least one growth season after closure. Take photos at fixed points and keep records available for auditing purposes.	

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Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	<u>Terrestrial biodiversity, and groundcover</u> Θ Infestation of the topsoil heaps and mining area with invasive and/or alien plant species. Θ Infestation of the reinstated area with invasive and/or alien plant species.	Θ Alien invasive plant species management plan. Θ Designated team to cut or pull-out invasive plant species that germinated on site. Θ Contact details of a Pest Control Officer.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Implement an invasive plant species management plan to control all invasive plant species on site in terms of NEM:BA, 2004 and CARA, 1983. Do invasive and/or alien plant species clearing throughout the life of the mining activities. Θ Do not allow planting or importing of any alien species to the site for landscaping, rehabilitation, or any other purpose. Θ Keep all stockpiles (topsoil & overburden) free of invasive plant species. Θ Control declared invasive and/or alien plant species on the rehabilitated areas through one of the following: ▪ The plants can be uprooted, felled, or cut off and can be destroyed completely. ▪ The plants can be treated chemically by a registered pest control officer (PCO) using an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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Θ Stripping and stockpiling of topsoil and/or overburden.	<u>Fauna</u> Θ Potential impact on faunal species.	Θ Visible beacons / fences demarcating the mining area. Θ Environmental awareness training material. Θ Snake posters. Θ Refuse bins with lids.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Ensure no fauna is caught, killed, harmed, sold, or played with. Θ The ECO or other suitably qualified person must remove any fauna directly threatened by the operational activities to a safe location. Θ Arrange a suitably qualified individual to handle and relocation any animal perceived to be dangerous/venomous/poisonous. Θ Arrange that all personnel undergo environmental induction regarding fauna management and in particular awareness about not harming or collecting species such as snakes, tortoises and owls which are often persecuted out of superstition. Instruct workers to report any animals that may be trapped in the working area. Θ Ensure no snares are set or nests raided for eggs or young. Θ Prevent litter, food or other foreign material thrown or left around the site. Daily remove such items to the site offices.	Applicable throughout operational phase. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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			Θ Add features (such as sloped edges or escape ramps) to all excavations to ensure any animals entering the area can exit safely.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	<u>Geology and Soil</u> Θ Topsoil/Soil Management.	Θ Earthmoving equipment to strip, stockpile and spread the topsoil. Θ Signage to identify Topsoil Stockpiles. Θ Stormwater control infrastructure. Θ Designated team to control invasive and/or alien plant species that may germinate on the topsoil heaps. Θ Cover crop to vegetate topsoil heaps (when needed) and reinstated soil.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Strip and stockpile the upper 300 mm (if available) of the soil before mining. Θ Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. Θ Ensure topsoil stripping, stockpiling, and re-spreading is done in a systematic way. Plan mining in such a way that topsoil is stockpiled for the minimum possible time. Θ Place the topsoil on a levelled area, within the mining footprint. Do not stockpile topsoil in undisturbed areas. Θ Protect topsoil stockpiles against losses by water- and wind erosion. The establishment of plants (indigenous grass) on the stockpiles will help to prevent erosion. Θ Ensure that topsoil heaps do not exceed 2.5 m and not sloped more than 1:2 to avoid collapse. Θ Keep topsoil stockpiles free of invasive plant species.	Applicable throughout operational phase. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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			Θ Vegetate the topsoil heaps to be stored longer than 3 months with an indigenous grass seed mix if vegetation does not naturally germinate within the first growth season. Θ Divert storm- and runoff water around the on-site stockpile area to prevent erosion. Θ Spread the topsoil evenly, to a depth of 300 mm, over the rehabilitated area upon closure of the site. Θ Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. Θ Plant an indigenous grass layer immediately after spreading topsoil to stabilise the soil and protect it from erosion. Rehabilitation extends until the first grass layer is well established. Θ Control run-off water with temporary banks, where necessary, to prevent accumulation of run-off causing down-slope erosion. Θ Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
Θ Stripping and stockpiling of topsoil and/or overburden.	<u>Geology and Soil</u> Θ Potential increase in runoff from denuded	Θ Stormwater management plan. Θ Storm water control structures such as berms	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance.	Applicable throughout operational-, and decommissioning phases.

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Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	areas and associated erosion. Θ Erosion of returned topsoil after rehabilitation.	to direct storm- and runoff water around the stockpiled topsoil area.	Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Implement a storm water management plan for the duration of the mining activities. Θ Limit clearing of vegetation to the mining footprint and associated infrastructure. Ensure no clearing takes place outside the minimum required footprint. Θ Place vegetation clearing on hold when heavy rains are expected. Θ Divert clean stormwater around the topsoil heaps and mining areas (if possible) to prevent erosion. Θ Implement the following regarding stockpiles: ▪ Locate on flat, stabilised areas away from drainage lines, ▪ Cover with vegetation to reduce wind and water erosion risks. Θ Ensure that adequate slope protection is provided when mining within steep slopes. Θ Regularly monitor roads and other disturbed areas within the project for erosion and ensure problem areas receive follow-up monitoring to assess the success of the remediation. Θ Rectify erosion problems within the mining area because of the mining activities immediately (within 48 hours) and monitored thereafter to ensure that it does not re-occur. Θ Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS:	Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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			▪ Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. You must prevent clean water from running or spilling into dirty water systems. ▪ Dirty water must be collected and contained in a system separate from the clean water system. ▪ Dirty water must be prevented from spilling or seeping into clean water systems. Θ Re-vegetate all exposed/bare surfaces and embankments once shaped. If revegetation of exposed surfaces cannot take place immediately, temporary erosion, and sediment control measures must be installed and maintained until such time that revegetation can commence. Θ Monitor all erosion and sediment control measures weekly for the life of the operation and repaired immediately when damaged. Only remove the erosion and sediment control structures once vegetation cover has successfully recolonised the affected areas. Θ After heavy rainfall events, check the site for erosion damage and rehabilitate this damage immediately. Fill in erosion rills and gullies with appropriate material and/or silt fences until vegetation has recolonised the rehabilitated area	
Θ Stripping and stockpiling of	<u>Hydrology</u>	Θ Copy of Water Use Authorisation (if needed).	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance.	Applicable throughout operational-, and decommissioning phases.

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topsoil and/or overburden. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.		Θ Water quality monitoring results. Θ Emergency Response Plan Θ Waste Management Plan Θ Stormwater Management Plan	Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Ensure all water uses applicable to the operation, as defined under the NWA, are authorised by the DWS. Keep a copy of the water use authorisation on-site for inspection or auditing purposes. Θ Conduct annual water quality monitoring for the following: water within the quarry sump(s), runoff water in the duck pond, and water in the final tank of the oil sump. Address any deviations from acceptable water quality standards that are attributable to mining activities without delay. In addition, test the water from the oil separator specifically for the presence of hydrocarbons. Θ To prevent the contamination of the aquatic environment: ▪ Instruct employees to notify site management immediately of pollution incidents. ▪ Prevent discharge of any pollutants, such as cement, concrete, lime chemicals and fuels into natural areas. Θ During rehabilitation, aim to restore surface water flow patterns to align with the natural drainage of the area, as far as is practically feasible.	Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.
Θ Drilling and blasting.	<u>Health and Safety Risks</u>	Θ Stocked first aid box. Θ Level 1 certified first aider.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance.	Applicable throughout operational-, and decommissioning phases.

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
Θ Excavation, processing, loading and hauling of aggregate. Θ Sloping and landscaping during rehabilitation.	Θ Health and safety risk posed by blasting activities. Θ Unsafe working environment for employees. Θ Health and safety risk posed by unrehabilitated quarry excavations.		Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Ensure that workers have access to the correct PPE as required by law. Θ Inform the surrounding landowners and communities in writing ahead of any blasting event. Θ Monitor the compliance of ground vibration and airblast levels to USBM standards with each blasting event. Θ Record all blasts with a vibro recorder. Θ Give audible warning of a pending blast at least 3 minutes in advance of the blast. Θ Limit fly rock and collect and remove flyrock and rock spill that falls beyond the working area. Θ Block the entrance into the excavations upon closure to restrict access.	Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.
Θ Excavation, processing, loading and hauling of aggregate.	<u>Existing Infrastructure</u> Θ Overloading of trucks having an impact on the public roads.	Θ Earthmoving equipment to maintain the gravel pavement structure of the roads. Θ Road signage to control traffic speed. Θ Proof of load weights to prevent overloading.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u>	Applicable throughout operational phase. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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
			Θ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. Θ Repair rutting and erosion of the access road caused as a direct result of the mining activities. Θ Prevent overloading of trucks and file proof of load weights for auditing purposes.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	<u>Cultural and Heritage Environment</u> Θ Archaeological, Heritage and Palaeontological Aspects.	Θ Contact number of an archaeologist & palaeontologist that can be contacted when a discovery is made on site.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Confine all mining to the development footprint area. Θ Implement the following change find procedure when discoveries are made on site: ▪ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their	Applicable throughout operational phase. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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
			immediate supervisor, and through their supervisor to the senior on-site manager. ▪ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. ▪ The senior on-site Manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify the SAHRA. ▪ Work may only continue once the go-ahead was issued by SAHRA. ▪ Should any suspected palaeontological material be at any time encountered during mining, a palaeontologist should likewise be immediately contacted to sample and record such occurrence.	
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing,	<u>Fire Management</u> Increased fire risk during operational phase.	Θ Fire beaters and -extinguishers. Θ Toolbox talks and emergency preparedness plan. Θ Contact number of the fire association/-brigade.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ Restrict contained fires for heating and cooking (i.e. in a fire drum) to designated areas.	Applicable throughout operational phase. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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
loading and hauling of material. Θ Sloping and landscaping during rehabilitation.			Θ Prevent employees from setting fires randomly outside designated areas. Θ Do not store fuel or chemicals under trees. Θ Do not store gas in the same storage area as liquid fuel. Θ Designate smoking to specific areas (>3 m from fuel or chemical storage areas) equipped with sand buckets for the disposal of cigarette buds. Θ Ensure the mine is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veld areas, and fire extinguishers of the appropriate type. Θ Implement specific fire safety precautions during welding activities associated with construction work. Ensure a working fire extinguisher is immediately at hand if any “HOT WORK” is undertaken e.g. welding, grinding, gas cutting etc, Θ Report any fires noted on site to the responsible SHE rep and/or fire officer. Θ Implement fire emergency procedures for the duration of the operational-, and decommissioning phases. Θ In the event of large fires ensure that all personnel assemble at a safe assembly point to be transported from site. Inform the fire department or local fire watch of the fire to ensure that the fire is brought under control as soon as possible.	

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
Θ Stripping and stockpiling of topsoil and/or overburden. Θ Drilling and blasting. Θ Excavation, processing, loading and hauling of material. Θ Sloping and landscaping during rehabilitation.	<u>Topography</u> Θ Alteration of the existing topography.	Θ Earthmoving equipment to rehabilitate mined areas.	<u>Responsible Person:</u> Θ Site Manager and ECO to ensure day-to-day compliance. Θ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Θ When possible, implement progressive rehabilitation of excavations and/or disturbed areas. Θ Implement rehabilitation to such a standard that the rehabilitated land surrounding the excavations can revert to grazing. Θ Use the excavated areas for the final depositing of overburden. Θ Return rocks and coarse material removed from the excavations into the excavations. Θ Remove coarse natural material used for the construction of ramps and dump it into the excavations. Θ Remove stockpiles during the decommissioning phase, rip the area and return the topsoil to its original depth to provide a growth medium. Θ Do not permit any waste to be deposited into the excavations. Θ Return the previously stored topsoil to its original depth, once overburden, rocks and coarse natural materials	Applicable throughout operational-, and decommissioning phases. Θ Daily compliance monitoring by site management and ECO. Θ Annual compliance monitoring by independent EAP.

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
			have been added to the excavations and it was profiled with acceptable contours and erosion control measures. Θ Seed the site with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within six months from closure of the site. Θ If required by the Regional Manager (DMRE) the soil must be analysed and any deleterious effects on the soil arising from the mining operation must be corrected and the area be seeded with a vegetation seed mix to his/her specification. Θ Measure rehabilitation success by: ▪ At least 70% vegetation cover with indigenous grass species within 12 months of seeding. ▪ Stabilization of slopes to a gradient of 1:3 to prevent erosion. ▪ Regular monitoring for invasive species, with removal interventions implemented quarterly. Θ Block the entrances of both quarry pits to prevent unauthorised access to humans and domestic animals.	

(APPENDIX 4 SECTION 1(1)(l))

N. FREQUENCY OF SUBMISSION OF THE PERFORMANCE ASSESSMENT / ENVIRONMENTAL AUDIT REPORT

The Environmental Performance Assessment / -Audit Report in accordance with Appendix 7 as prescribed in Section 34 of the EIA Regulations, 2014 (as amended) must annually be submitted to the DMRE for compliance monitoring purposes or in accordance with the period stipulated by the department.

(APPENDIX 4 SECTION 1(1)(m))

O. ENVIRONMENTAL AWARENESS PLAN

Once the 2025 EMPR is approved by the DMRE a copy of the approved document will be handed to the site manager for him to familiarise himself with. Issues such as activity boundaries, waste management, dust and vegetation principals will be discussed. The operations manager must ensure that he understands the EMPR document and its requirement and commitments before any activities take place. The Environmental Control Officer must daily check compliance of the activities with the management programmes described in the EMPR.

An initial environmental induction meeting must be held with all the site employees to inform them of the Basic Rules of Conduct regarding the environment, and proof of attendance must be filed for auditing purposes. Each new employee (including those of sub-contractors) must attend the environmental induction meeting prior to commencement of his/her responsibilities. Subsequently, all employees must attend an annual environmental training refresher.

The environmental awareness plan must be a living document that is regularly reviewed and updated as relevant environmental concerns arise. The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks.

Θ **Site Management**

- Stay within boundaries of site – do not enter adjacent properties.
- Keep tools and material properly stored.
- Smoke only in designated areas.
- Use toilets provided – report full or leaking toilets.

Θ **Water Management and Erosion**

- Check that rainwater flows around work areas and are not contaminated.
- Report any erosion.

- Check that dirty water is kept from clean water.
- Do not swim in or drink from quarry pits / excavations.

Θ **Waste Management**

- Take care of your own waste
- Keep waste separate into labelled containers – report full bins.
- Place waste in containers and always close lid.
- Don't burn waste.
- Pick-up any litter laying around.

Θ **Hazardous Waste Management (Petrol, Oil, Diesel, Grease)**

- Never mix general waste with hazardous waste.
- Use only sealed, non-leaking containers.
- Keep all containers closed and store only in approved areas.
- Always put drip trays under vehicles and machinery.
- Empty drip trays after rain.
- Stop leaks and spills, if safe:
  - ✓ Keep spilled liquids moving away.
  - ✓ Immediately report the spill to the site manager/supervision.
  - ✓ Locate spill kit/supplies and use to clean-up, if safe.
  - ✓ Place spill clean-up wastes in proper containers.
  - ✓ Label containers and move to approved storage area.

Θ **Discoveries**

- Stop work immediately.
- Notify site manager/supervisor.
- Includes – archaeological finds, cultural artefacts, contaminated water, pipes, containers, tanks and drums, any buried structures.

Θ **Air Quality**

- Wear protection when working in very dusty areas.
- Implement dust control measures:
  - ✓ Water all roads and work areas.
  - ✓ Minimize handling of material.
  - ✓ Obey speed limit and cover trucks.

Θ **Driving and Noise**

- Use only approved access road.
- Respect speed limits.
- Only use turn-around areas – no crisscrossing through undisturbed areas.
- Avoid unnecessary loud noises.
- Report or repair noisy vehicles.

Θ **Vegetation and Animal life**

- Do not remove any plants or trees without approval of the site manager.
- Do not collect firewood.
- Do not catch, kill, harm, sell or play with any animal, reptile, bird or amphibian on site.
- Report any animal trapped in the work area.
- Do not set snares or raid nests for eggs or young.

Θ **Fire Management**

- Do not light any fires on site, unless contained in a drum at demarcated area.
- Put cigarette butts in a rubbish bin.
- Do not smoke near gas, paints, or petrol.
- Know the position of firefighting equipment.
- Report all fires.
- Don't burn waste or vegetation.

(APPENDIX 4 SECTION 1(1)(n))

P. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

The Financial Provision Regulations, 2015 read with the National Environmental Management Act, 1998 (Act No 107 of 1998) stipulates that a mining right holder must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of mining as contemplated in the Act and to the satisfaction of the Minister responsible for mineral resources.

Therefore, apart from the information required in terms of Appendix 4 of the EIA Regulations, 2014 (as amended), this EMPR includes information regarding the financial provision of the mine as well as the most recent Closure Plan (see Appendix D).

Apart from the above, no other specific information was requested by the DMRE that had to be incorporated into this document.

d) FINANCIAL PROVISION

The most recent reassessment of the financial provision of the Quarry was for the year 2025 and is attached to this document as Appendix F. The MR Holder must annually review and update the financial provision, upon which it must be submitted to DMRE for review and approved as being sufficient to cover the environmental liability at the time and for closure of the mine at that time.

Q. ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE.

The assumptions made in this document which relate to the assessment of the mining environment and mitigation measures proposed, stem from site specific information gathered from site inspections, desktop studies, and background information that were gathered by the EAP. No uncertainty regarding the project or the receiving environment could at this stage be identified.

R. UNDERTAKING BY EAP

The EAP herewith confirms

a) the correctness of the information provided in the reports;
b) the inclusion of comments and inputs from stakeholders and I&AP's;
c) that the information provided by the EAP to interested and affected parties and any response by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein;

Christine Fouché

Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

Name of Company:

19 August 2025

Date:

S. UNDERTAKING BY MINING RIGHT HOLDER

I,…….……the undersigned and duly authorised thereto by……*OMV Kimberley Mining (Pty) Ltd*…….……hereby undertake to implement all the aspects contained in the EMPR and accept full responsibility therefore.

SIGNED at ……..…….. this ……..…… day of ……..…..…… 2025

FINAL DOCUMENT TO BE SIGNED BY MR HOLDER

_____

SIGNATURE

WITNESSES:

1…….

2…….

Official use

APPROVAL

Approved in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998), as amended.

SIGNED at …… this …… day …… 202…….

_____

REGIONAL MANAGER
NORTHERN CAPE

Undertaking/eg **-END-**

APPENDIX A
REGULATION 42 MINE PLAN

APPENDIX B

SITE ACTIVITIES / LAYOUT MAP

APPENDIX C

ENVIRONMENTAL IMPACT STATEMENT

APPENDIX D

CLOSURE PLAN

APPENDIX E

INVASIVE PLANT SPECIES MANAGEMENT PLAN

APPENDIX F

FINANCIAL PROVISION CALCULATION

(NON-PUBLIC DOCUMENT)

APPENDIX G

WATER QUALITY TEST PARAMETERS

APPENDIX H

CV AND EXPERIENCE RECORD OF EAP