THABA STONE QUARRY
PORTION 2 AND THE REMAINING EXTENT OF THE FARM UITKOMST NO 558, THABA 'NCHU DISTRICT, FREE STATE PROVINCE

ENVIRONMENTAL MANAGEMENT PROGRAMME

MAY 2025

DMRE REFERENCE NUMBER	**FS 30/5/1/2/2/195 MR**
DOCUMENT VERSION	**Revision 01**

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EXECUTIVE SUMMARY

Thaba Stone (Pty) Ltd holds a mining right (DMRE Ref No: FS 30/5/1/2/2/195 MR) to mine aggregate over an 80.9896-ha area on Portion 2 and the Remaining Extent of the farm Uitkomst No 558, located in the Thaba 'Nchu District, Free State Province. The Mining Right remains valid until 19 May 2040, with the possibility of renewal.

The original 2008 Environmental Management Programme (EMPR) was approved before the introduction of the NEMA Environmental Impact Assessment (EIA) Regulations, 2014 (as amended). As a result, it does not fully align with the regulatory requirements of Appendix 4 of Government Notice Regulation (GNR) 982. Since its initial approval, various operational changes and site improvements have occurred, necessitating an update to ensure legal compliance and improved environmental management.

Following the findings of the 2024 Environmental Performance Assessment (EPA), it was recommended that the EMPR be amended to:

- Align with current NEMA EIA Regulations and DMRE requirements.
- Address the environmental impacts and management measures associated with ongoing mining activities.
- Incorporate updated mitigation strategies for air quality, water management, biodiversity conservation, waste management, and land rehabilitation.
- Establish a monitoring and reporting framework to ensure compliance with environmental obligations throughout the operational and decommissioning phases.

This 2025 Amended EMPR will replace the 2008 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.

Thaba Stone (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)
DARD	Department of Agriculture and Rural Development
DCSRT	Department of Community Safety, Roads and Transport
DESTEA	Department of Economic Small Business Development, Tourism and Environmental Affairs
DMRE	Department of Mineral and Resources and Energy
DoL	Department of Labour
DPWI	Department of Public Works and Infrastructure
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
IDP	Integrated Development Plan
MHSA	Mine Health and Safety Act, 1996 (Act No 29 of 1996)
MMM	Mangaung Metropolitan Municipality
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MR	Mining Right
MR Holder	Thaba Stone (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-FS	Provincial Heritage Resources Agency – Free State Province
PPE	Personal Protective Equipment
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANRAL	South African National Roads Agency
SANS	South African National Standards
SDS	Safety Data Sheet
MA	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:	Thaba Stone (Pty) Ltd
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FAX NO:	-
POSTAL ADDRESS:	P.O. Box 25428, Langenhoven Park, Bloemfontein, 9330
PHYSICAL ADDRESS:	Farm Uitkomst No 558, Thaba ‘Nchu District
FILE REFERENCE NUMBER:	FS 30/5/1/2/2/195 MR

A. INTRODUCTION

Thaba Stone (Pty) Ltd holds a mining right (DMRE Ref No: FS 30/5/1/2/2/195 MR) to mine aggregate from an 80.9896 ha area that extends over Portion 2 and the Remaining Extent of the farm Uitkomst No 558 in the Thaba 'Nchu District of the Free State. The mining right is valid until 19 May 2040 upon which it can be renewed.

The 2008 EMPR for Thaba Stone Quarry predates the NEMA EIA Regulations, 2014 (as amended) and does not fully comply with Appendix 4 of GNR 982. Thaba Stone Quarry has since made various changes and/or improvements on site, and the 2024 environmental performance assessment / environmental audit report (EPA) therefore recommended that the environmental management programme (EMPR) should be amended/updated 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 (revision 01) for Thaba Stone 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 2008 EMPR of the mine 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. Thaba Stone (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 Thaba Stone (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 G.

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 G.

(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 2 and the Remaining Extent of the farm Uitkomst No 558	
Mining Area (Ha)	80.9896 ha	
Magisterial District	Thaba 'Nchu District Mangaung Metropolitan Municipality	
Distance and direction from the nearest town	Thaba Stone Quarry is located ±2.5 km east of Thaba 'Nchu and ±18 km west of Tweespruit. Access to the quarry is directly of the N8 that passes the site to the south.	
21 digit Surveyor General Code for each farm portion	F03200000000055800000 F03200000000055800002	
Site Coordinates	A1 29°12'54.36" S	26°52'21.28" E
	B1 29°13'18.75" S	26°52'57.21" E
	A 29°13'26.93" S	26°53'09.21" E
	F1 29°13'31.84" S	26°53'07.89" E

	C1 29°13'28.00" S	26°52'54.22" E
	D1 29°13'26.02" S	26°52'45.28" E
	G1 29°13'25.09" S	26°52'42.44" E
	H1 29°13'38.93" S	26°52'35.80" E
	I1 29°13'35.77" S	26°52'23.55" E
	J1 29°13'20.05" S	26°52'31.15" E
	E1 29°13'12.15" S	26°52'13.11" E

b) DESCRIPTION OF THE MINING ACTIVITIES

1. PROJECT DESCRIPTION – OPERATIONAL PHASE

Thaba Stone Quarry mines material from the hard rock quarry in the north-western corner of the mining area, as well as weathered dolerite from the borrow pit in the south-eastern corner (see following figure). The aggregate produced at the quarry is mainly sold to the road construction, building, and ready-mix industries.

The Quarry periodically operates 24-hours, 7-days a week especially when material is needed for road related projects. Blasting is only done on weekdays between 08:00 and 17:00. 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:

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

1.1 Hard Rock Quarry

The Right Holder implements the opencast mining method where the topsoil (if any) is stripped and stockpiled separately before the excavation is expanded. Rock breaking is done initially by drilling and blasting using crawler mounted rigs and emulsion type bulk explosives. The broken rock is sorted and loaded onto articulated dump trucks that haul the material to the primary crushing plant, where various

products are further conveyed to secondary-, tertiary- and quaternary crushing and screening processes to result in the desired products. The material is stockpiled until transported to clients.

1.2 Borrow Pit

Gravel and weathered dolerite is removed with earthmoving equipment, loaded onto trucks and transported to the stockpile area from where it is sold to clients. No blasting is needed at the borrow pit.

1.3 Ready-Mix Plant

In addition to the mining of aggregate by the MR Holder, a third-party operator runs a ready-mix plant located behind the site offices within the mining footprint. The plant acquires aggregate from the mine to manufacture ready-mix concrete that is sold and transported to clients.

1.4 Historic Excavations

The area south of the hard rock quarry (Historic Excavation 1 in the following figure) was excavated in the past, however, is presently used for the stockpiling of materials.

Another historic excavation (Historic Excavation 2 in the following figure) is present in the southern corner of the mining area where mining ceased due to the pits proximity to the nearby power line (±10 m). The pit is used as spoil site for inert material in an attempt to reinstate the excavation and level/slope the disturbance.

Figure 1: Satellite view of the layout of the Thaba Stone Quarry (image obtained from Google Earth).

1.5 Site Infrastructure

Thaba Stone Quarry has well established buildings and infrastructure on site, albeit compact and specialised. The following main areas are defined at the mine as indicated in the following figure:

1. Historic Excavation 1 used as Stockpile Area;
2. Parking Area;
3. Workshop and Storage Areas;
4. Stockpile Area;
5. Stockpile Area;
6. Office Building and Weigh Bridge;
7. Ready-Mix Plant;
8. Access and Internal Gravel Roads.

Figure 2: Satellite view of the various operational areas at Thaba Stone Quarry (image obtained from Google Earth).

The larger mining footprint is fenced while the hard rock excavation is defined by perimeter soil berms. Access to the mine is possible from the N8 National Road passing the mine to the south.

The crushing plant indicated on the above Google Earth image has since the satellite image was taken been demolished and removed from site. The mining contractor of the MR Holder will henceforth use mobile crushers that will crush and screen the mined material inside the quarry pit.

1.6 Water Use

The potable water of the Quarry is bought and transported to site, while process water is extracted from the sump in the quarry pit. Presently (2025) the site does not wash any material, and water is therefore mainly used for dust suppression at the mine. The mine does not extract water from any of the boreholes or farm dams.

1.7 Electricity Use

Gensets and solar panels are used to power the mining infrastructure.

1.8 Servicing and Maintenance

A workshop was established on site (Figure 2) where minor servicing and emergency repairs of project related equipment/machinery takes place. Fuel is stored in a 23 000 l tank with build in drip tray. As mentioned earlier a genset powers the infrastructure. Chemicals are stored in the designated storage containers in accordance with the product specific material safety data sheets.

1.9 Waste Management

The mine generates limited amounts of general- and hazardous waste. 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 on site) is removed to the Thaba Nchu 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.

1.10 Labour Component

Presently (May 2025), Thaba Stone Quarry has a permanent labour component of only two employees. Sub-contractors are periodically employed for contract crushing/mining, who then bring their own personnel. The permanent employees of Thaba Stone were hired from the surrounding community 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, is to obtain a closure certificate whilst complying with the requirements of the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) [MPRDA]. To realise this, the following main objectives must be achieved:

- Remove all buildings and/or infrastructure that will no longer be needed by the landowner as well as all waste from the mine as per the requirements of this EMPR and/or the Provincial Department of Minerals Resources and Energy.
- Shape and contour disturbed areas in compliance with the approved Closure Plan.
- Ensure that permanent changes in topography (due to mining) are sustainable and do not cause erosion or a safety risk to the landowner/community.
- Make all excavations safe.
- Use the topsoil effectively to promote the re-establishment of vegetation.
- Ensure that all rehabilitated areas are stable and self-sustaining in terms of vegetation cover.
- Eradicate all weeds/invader 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 and landscaping the disturbed footprints. The buildings and roads at the property will most likely be retained for future use by the landowner and will therefore not be demolished unless 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 hard rock quarry and borrow pits into landscape features. For the hard rock quarry 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 disturbance at the borrow pits will be shaped to an acceptable slope with previously stockpiled overburden (if any) and topsoil, upon which the rehabilitated area will be seeded with a grassmix of indigenous species to promote the reestablishment of the vegetation cover.

The decommissioning activities will therefore consist of the following:

- Sloping and landscaping the hard rock quarry and borrow 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 reintroduced to the hard rock quarry to soften sides 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 hard rock quarry will nevertheless behave as a sump and collect surface run-off after wet periods. The floor of the quarry may, therefore, reveal fluctuating water levels depending on rainfall patterns. Considering this, it is important to adequately block access to the excavation (soil berm / oversize rock in entrance) to prevent unauthorized access to humans (especially children) and domestic animals upon closure of the mine.

Should the borrow pits be rehabilitated as proposed in the attached Closure Plan, no residual impact is expected after closure.

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 B for the general surface plan of the operation.

Figure 3: Satellite view of the Thaba Stone Quarry mining footprint (image obtained from Google Earth).

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 2008 approved EMPR of Thaba Stone Quarry must be amended as a result of an environmental performance audit (2024).
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.		The mitigation measures proposed for the site consider the NEM:WA.

LEGISLATION	REFERENCE WHERE APPLIED	POLICY CONTEXT APPLICABLE TO PROJECT
NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)		
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 THABA STONE	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 submitted for approval.
Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002)	Mining right required for mineral extraction.	Thaba Stone (Pty) Ltd holds a mining right (FS 30/5/1/2/2/195 MR)	DMRE	**Compliant:** Mining Right valid until 2040.
National Water Act (NWA) (Act 36 of 1998)	Water use licensing / General authorisation (Section 21 activities).	Water is used for dust suppression, sourced from a sump in the quarry pit.	DWS	**Potentially Non-Compliant:** MR Holder to engage DWS regarding water uses of the site.
National Environmental Management: Air	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 but

LEGISLATION	TRIGGER	APPLICABILITY TO THABA STONE	RESPONSIBLE AUTHORITY	COMPLIANCE STATUS
Quality Act (NEM:AQA) (Act 39 of 2004)				ongoing monitoring required.
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 – Free State (PHRA-FS)	**Compliant:** No known heritage sites in the mining area.
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 Employment and Labour (DoEL)	**Compliant:** Safety regulations followed, but ongoing audits required.
Mine Health and Safety Act (MHSA) (Act 29 of 1996)	Mine health and safety compliance.	The quarry follows health and safety standards for workers.	DMRE	**Compliant:** Mine adheres to safety protocols.
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, Land Reform, and Rural Development (DALRRD)	**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;	SANRAL	**Compliant:** Transport regulations followed, but monitoring required

LEGISLATION	TRIGGER	APPLICABILITY TO THABA STONE	RESPONSIBLE AUTHORITY	COMPLIANCE STATUS
		overloading must be prevented.		

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 Express 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 01 July 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. 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 this application.

LANDOWNERS & INTERESTED AND AFFECTED PARTIES	STAKEHOLDERS
❖ Tewie Wessels Familie Trust (Landowner) Remaining Extent of Uitkomst No 558 Portion 2 of Uitkomst No 558 ❖ Republic of South Africa Koele No 97 Thaba 'Nchu Townlands A No 605	❖ Department of Economic Small Business Development, Tourism and Environmental Affairs ❖ Department of Public Works and Infrastructure ❖ Department of Agriculture and Rural Development ❖ Department of Labour ❖ Department of Community Safety, Roads and Transport ❖ Department of Water and Sanitation ❖ Mangaung Metropolitan Municipality ❖ Mangaung Metropolitan Municipality Ward No 39 & 43 ❖ Eskom ❖ SANRAL ❖ SAHRA

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
❖ 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.* ❖ 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.* ❖ 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 two conspicuous and publicly accessible areas. The notice boards that will be placed complies with the requirements of Regulation 41(3). The notices will be printed on notice boards of 60 x 42 cm in Arial font of sufficient size.
❖ 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;* (ii) *owners, persons in control of, and occupiers of land adjacent to the site where the activity*	(i) The MR Holder is in discussions with the landowner regarding this application. The landowner will also be invited to register on the project and comment on the EMPR amendment. (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
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.
❖ 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 was advertised in the Express newspaper on 14 May 2025.
❖ 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 Express is a provincial newspaper distributed in English, free of charge in the region applicable to this application.
❖ 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.*	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. The public participation process of the amended EMPR coincides with the public participation of the mine's new SLP. The invitation to comment on the amended EMPR also invites all I&AP's to the SLP community meeting (26 May 2025) where the EMPR could be discussed if the need arises.
❖ 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.
❖ 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 landowner, stakeholders and potential I&AP's for perusal and commenting over a 30-days commenting period. The amended EMPR will also be available

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.*	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.
❖ 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		-	-	-	-
Tewie Wessels Familie Trust ❖ Remaining Extent of Uitkomst No 558 ❖ Portion 2 of Uitkomst No 558	X	Any comments to be received from the landowner will be incorporated into the final EMPR amendment.			
Lawful occupier/s of the land	-	-			
N/A	-	-	-		-
Landowners or lawful occupiers on adjacent properties	**X**	-			
Republic of South Africa ❖ Koele No 97 ❖ Thaba 'Nchu Townlands A No 605	X	Any comments to be received from the surrounding landowners will be incorporated into the final EMPR amendment.			
Municipal councillor	X	-	-	-	-
Mangaung Metropolitan Municipality (Ward 39 & 43)	X	Any comments received from the ward councillor 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
Municipality		-	-	-	-
Mangaung Metropolitan Municipality (MMM)	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 Community Safety, Roads and Transport (DCSRT)	X	Any comments received from the DCSRT will be incorporated into the final final EMPR amendment.			
Department of Public Works and Infrastructure (DPWI)	X	Any comments received from the DPWI 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
Communities	No communities other than those listed as part of the neighbours 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
Other Competent Authorities affected	X	-	-	-
Department of Economic Small Business Development, Tourism and Environmental Affairs (DESTEA)	X	Any comments received from DESTEA 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.		
Department of Agriculture and Rural Development (DARD)	X	Any comments received from DARD 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.		
OTHER AFFECTED PARTIES	-	-	-	-
N/A	-	-	-	-
INTERESTED PARTIES	-	-	-	-
N/A	-	-	-	-

F. ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE MINING AREA

a) CLIMATE

The following chart shows the maximum, minimum and average temperatures of the Thaba 'Nchu region. Thaba 'Nchu experiences its highest temperatures during the summer months from November – March with peaks of up to 33°C; thereafter the mercury drops to lows of 2°C during June/July.

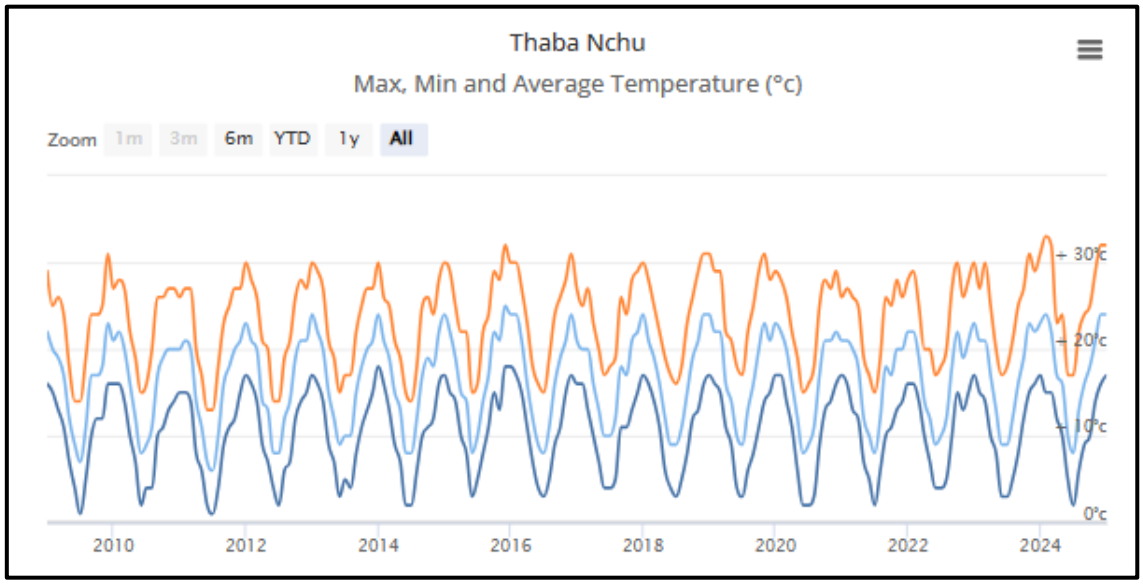

Figure 4: Maximum, minimum, and average temperature of the Thaba 'Nchu region where the orange line indicates the maximum temperature, the light blue line shows the averages, and the dark blue line shows the minimum temperatures (chart obtained from http://www.worldweatheronline.com)

According to the 2008 EMPR the average rainfall of the Thaba 'Nchu area is 600 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 ±465 mm, while the area received the lowest rainfall during July 2024 and the highest in April 2024.

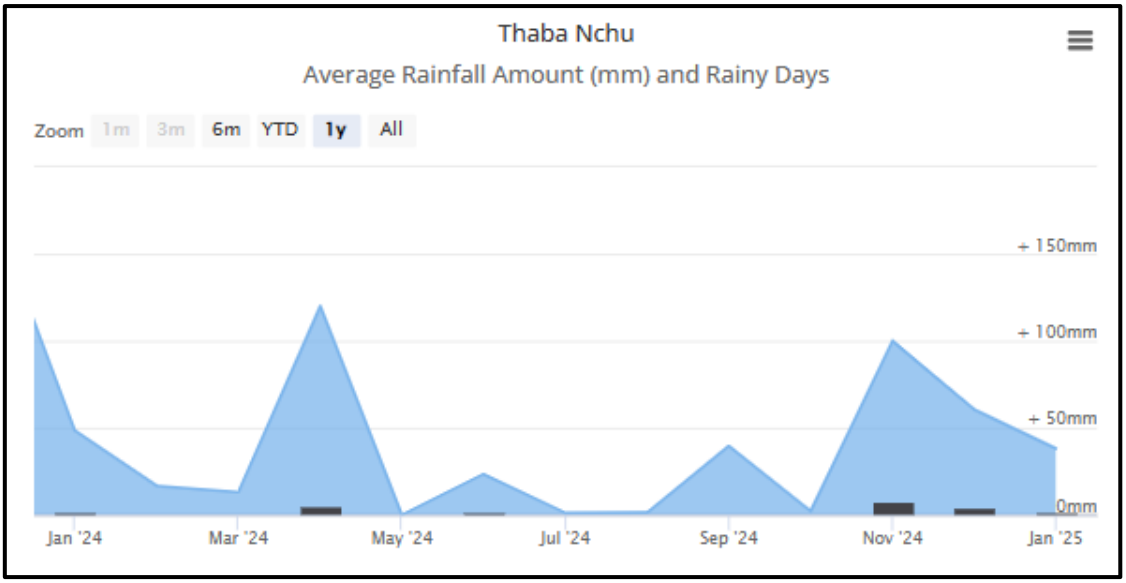

Figure 5: Average rainfall amount and rainy days count for the Thaba 'Nchu region (chart obtained from http://www.worldweatheronline.com)

The Bram Fischer International 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 south to south-easterly direction (north / north-westerly wind), with the average wind speed being ±6 knots as shown in the figure below.

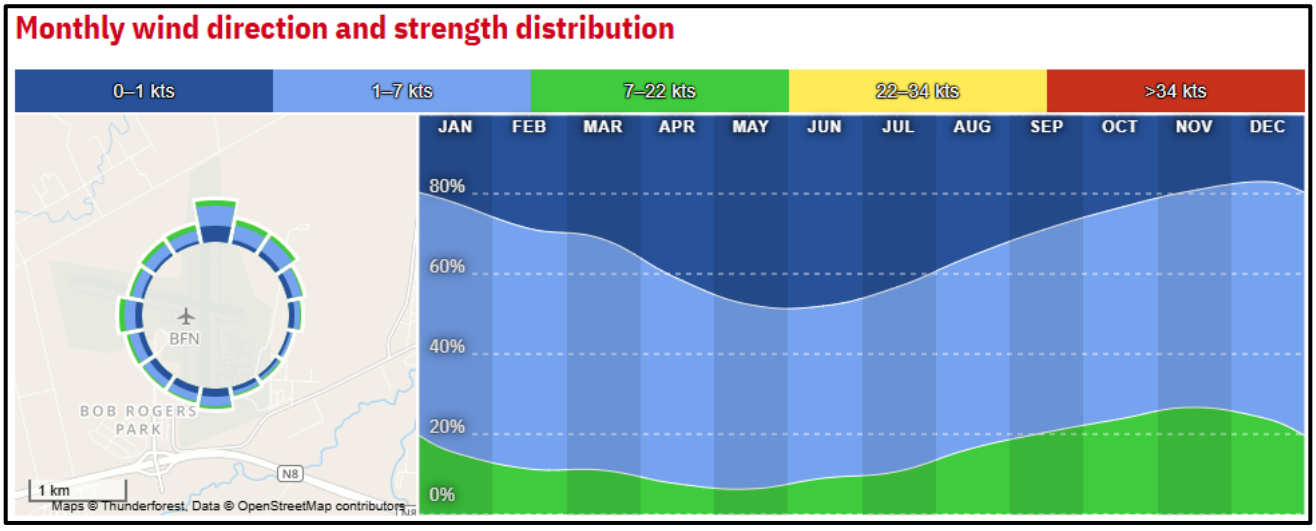

Figure 6: Image showing the dominant wind direction (first panel) and average wind speed over a 12 month period as measured at the Bram Fisher International Airport (image obtained from http://www.windfinder.com/windstatistics/bloemfontein).

b) TOPOGRAPHY

The greater area is characterized by an undulating topography, with the Thaba 'Nchu Mountain to the south of the property. Historic mining impacted the topography of the farm even before 2008.

As shown in the following figure, the topography of the farm is relatively flat with an increase in elevation towards the north-western corner where the hard rock quarry is located. The route indicated below shows an average slope of 4.7% over 4.34 km, with a maximum elevation gain of 47.3 m (or -28.0 m elevation loss).

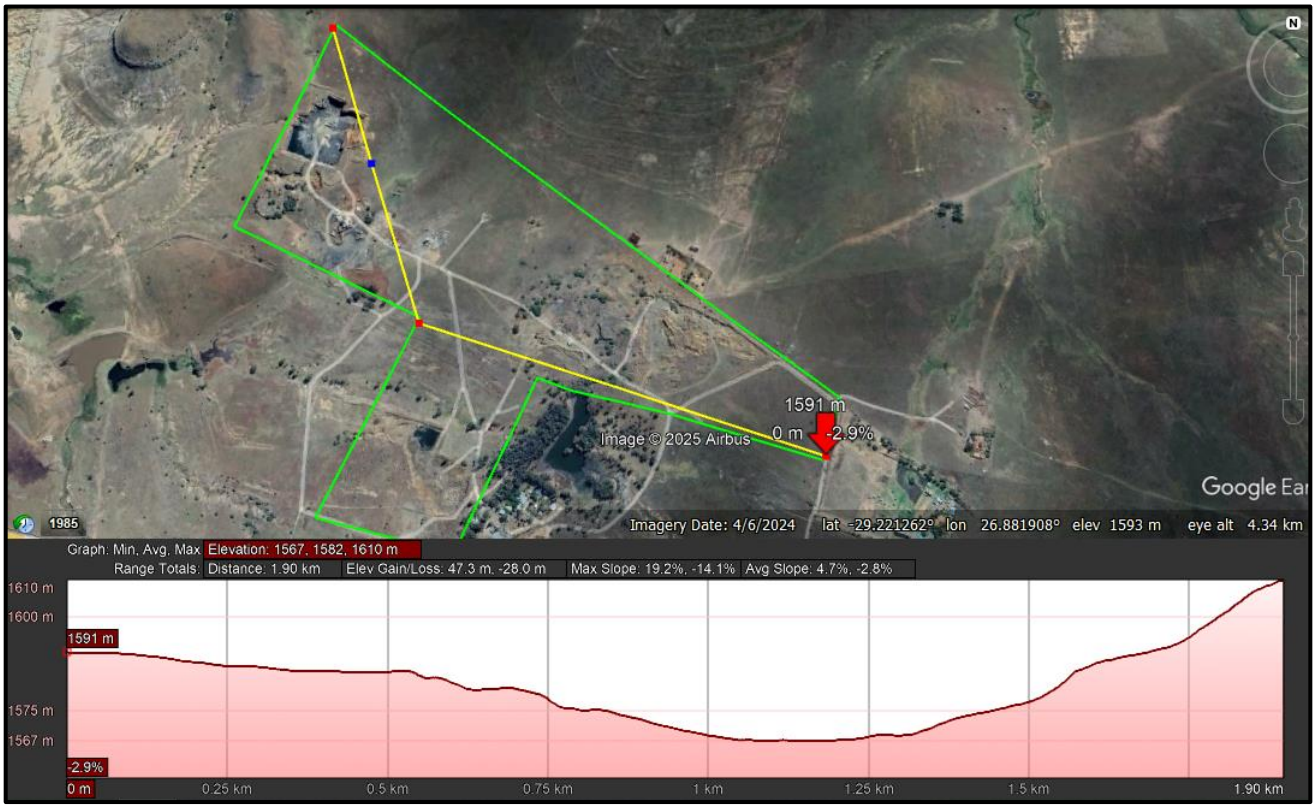

Figure 7: Elevation profile of the mining area (Image obtained from Google Earth).

c) VISUAL CHARACTERISTICS

The visual character of the surrounding areas resemble that of a rural area and mainly comprises of open grassland used for grazing. The N8 National Road, travelling between Bloemfontein (west) and Tweespruit (east), passes the mining area to the south, and the western part of the farm Uitkomst use to border onto the Thaba 'Nchu golf course. The remaining areas are surrounded by commercial farms.

The hard rock quarry, mining related buildings, and processing infrastructure are visible from the N8 road, but the borrow pits (current and historic) are screened from public view. Thaba Stone Quarry has been operational for the past 13 years, with mining on the farm Uitkomst dating back even further. The mining related impact on the visual features of the area has therefore become part of the landscape and *status quo*.

d) AIR QUALITY AND NOISE AMBIANCE

The background air quality and noise ambiance of the surrounding area is relatively good due to low industrial activity in the immediate area. The town of Thaba 'Nchu, bordering the property to the west, has an impact on the natural air quality through especially emissions caused by cooking/heating fires. Other factors contributing to air pollution stem from periodic veld fires and vehicle emissions along the N8 that also affects the noise levels of the area.

Thaba Stone Quarry has been contributing to the air quality and noise ambiance of the area through the following:

- Dust generated by mining related vehicles on unsurfaced roads;
- Dust generated during topsoil and overburden removal and the loading of material onto trucks and tipping into the plant;
- Blasting at the hard rock quarry;
- Crushing and screening at the processing area;
- Transport of material from the mine.

The nearest receptor to the mine is the landowner who stays ±800 m south-east of the nearest stockpile area and ±970 m from the hard rock quarry. The landowner supports the Quarry operations, and no air or noise related complaints were raised to date.

e) GEOLOGY AND SOIL

The geology of the area is characterised by sedimentary mudstones and sandstone mainly of the Adelaide Subgroup (Beaufort Group, Karoo Supergroup), giving rise to vertic, melanic and red soils (typical forms are Arcadia, Bonheim, Kroonstad, Valsrivier and Rensburg). The area is typical of the Dc land type (dominating the landscape). The less common intrusive dolerites of the Jurassic Karoo Dolerite Suite support dry clayey soils typical of the Ea land type.

The hard rock quarry continues to mine material from one of the intrusive dolerite dykes of the farm, while weathered dolerite is mined at the borrow pits.

f) HYDROLOGY

The mining area is situated in the upper catchment of the Koranaspruit within the Riet-Modder sub-water management area that forms part of the Upper Orange Water Management Area (ID 12). There are no surface water resources (such as dams, streams and/or rivers) within the mining footprint. Water accumulates in the sump of the hard rock quarry from where it is extracted and used for dust suppression purposes on the mine. No boreholes occur within the mining footprint, nor does the mining operations make use of groundwater.

g) TERRESTRIAL BIODIVERSITY AND GROUNDCOVER

According to Mucina and Rutherford (2012) the natural vegetation type of the study area is classified as the Central Free State Grassland (Gh 6), as indicated in the following figure.

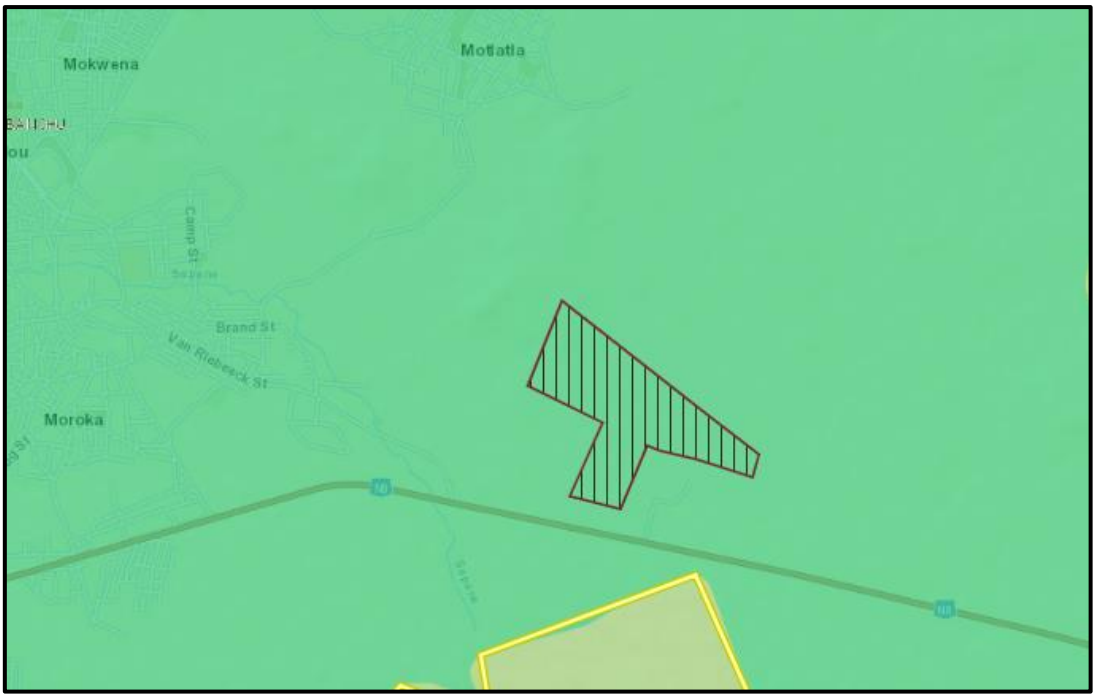

Figure 8: BGIS National Vegetation Map showing the vegetation type of the study area, where the dark green shading indicates the Central Free State Grassland (Gh 6), and the black stripped polygon indicates the mine. (Image obtained from the BGIS Map Viewers website).

Central Free State Grassland (Gh 6)

The vegetation and landscape features of the Central Free State Grassland (Gh 6) vegetation type is characterised by undulating plains supporting short grassland, in natural condition dominated by *Themeda triandra* while *Eragrostis curvula* and *E. chloromelas* become dominant in degraded habitats. Dwarf karoo bushes establish in severely degraded clayey bottomlands. Overgrazed and trampled low-lying areas with heavy clayey soils are prone to *Vachellia karroo* encroachment (Mucina & Rutherford, 2012).

Some of the important taxa found in this vegetation type include (amongst others) the following Grasses: *Aristida adscensionis, A. congesta, Cynodon dactylon, Eragrostis chloromelas, E. curvula, E. plana, Panicum coloratum, Setaria sphacelata, Themeda triandra*; Herbs: *Berkheya onopordifolia* var. *onopordifolia, Chamaesyce inaeguilatera, Conyza pinnata, Crabbea acaulis, Geigeria aspera* var. *aspera, Hermannia depressa*; Low Shrubs: *Felicia muricata, Anthospermum rigidum* subsp. *pumilum, Helichrysum dregeanum, Melolobium candicans, Pentzia globosa*.

The vegetation type is classified as Vulnerable and according to Mucina and Rutherford (2012) only small portions have statutory conservation status (Willem Pretorius, Rustfontein and Koppies Dam Nature Reserves) as well as some protection in private nature reserve. A conservation target of 24% 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 situated within the Central Free State Grassland.

Site Specific Conditions

Expansion of the hard rock quarry and/or borrow pit does periodically require the removal of the natural vegetation cover. No endangered and or protected plant species has thus far been identified within the mining footprint that needs special protection and/or management practices. The MR Holder removes the vegetation cover with the topsoil (where available) that is stockpiled separately to be used during the rehabilitation phase.

Invader plant species known to occur in the disturbed areas include (but not limited to) the following:

➢ *Argemone mexicana*	Mexican Poppy	NEM:BA Category 1b
➢ *Cirsium vulgare*	Scotch Thistle	NEM:BA Category 1b
➢ *Datura stramonium*	Common Thorn Apple	NEM:BA Category 1b
➢ *Nicotiana glauca*	Wild Tobacco	NEM:BA Category 1b
➢ *Xanthium spinosum*	Spiny Cocklebur	NEM:BA Category 1b

h) FAUNA

Thaba Stone Quarry operates as part of an active farm used for grazing of livestock. Although the natural animal diversity of the greater area has over the years been highly transformed due to added human pressures and the expansion of the nearby Thaba 'Nchu residential areas, the undeveloped parts of the farm are still frequented by smaller animal species such as:

➢ *Canis mesomelas*	Black-backed Jackal
➢ *Cynictis penicillata*	Yellow Mongoose
➢ *Genetta genetta*	Common Genet
➢ *Hystrix africaeaustralis*	Cape Porcupine
➢ *Ictonyx striatus*	Striped Polecat

- *Lepus capensis* Cape Hare
- *Orycteropus afer* Aardvark
- *Pedetes capensis* Springhare
- *Phacochoerus africanus* Warthog
- *Procavia capensis* Rock hyrax
- *Proteles cristata* Aardwolf
- *Raphicerus campestris* Steenbok
- *Sylvicapra grimmia* Common Duiker
- Common bird species
- Various snakes

As mentioned earlier, the Quarry has been operational for at least the past 13 years and the faunal component has therefore become accustomed to the mining operations. No endangered and/or protected species reside within the mining footprint that warrants special consideration.

i) CULTURAL AND HERITAGE ENVIRONMENT

The 2008 EMPR notes that during the mining right application process it was confirmed that there are no graves or other items of archaeological or cultural interest within the mining footprint. Neither did the mining operations of the past 13 years identify any artefacts or areas of archaeological and/or palaeontological concern.

j) SOCIO-ECONOMIC ENVIRONMENT

Thaba Stone Quarry lays within Ward 39 of the Mangaung Metropolitan Municipality (MMM) ±2.5 km east of Thaba 'Nchu and ±18 km west of Tweespruit. The MMM's area is extensive and includes the city of Bloemfontein, as well as the towns Soutpan, Botshabelo, Thaba Nchu, Dewetsdorp, Wepener, and Van Stadensrus. Thaba 'Nchu used to be part of Bophuthatswana and as a result it exhibits a large area of rural settlements on former trusts lands.

According to the Mangaung Metropolitan Municipality Draft Integrated Development Plan 2022/20227 (IDP), ±31% of the MMM population (811 431) resides in Botshabelo – Thaba 'Nchu. The IDP notes that an Agri-Hub is planned at Thaba 'Nchu that is regarded as one of the primary strategy directives that will spark a change in the agricultural sector and result in a progressive economy. The Agri-Hub will be the focus where agricultural produce will be processed. It is envisaged that the anchor agri-businesses will create spin-off opportunities that will develop the whole area and act as a catalyst to empower the local communities by creating job opportunities and skills development.

According to StatsSA the MMM has a working age population (15-64 years) of 68.2% that is a 0.6% increase since 2011. The no schooling rate decreased with 1.5% from 2011 while the population increased with 4.2% between 2011 and 2022.

As mentioned earlier, the permanent employees of Thaba Stone Quarry resides mainly in Thaba 'Nchu 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.

k) LAND USE

The farm Uitkomst No 558 is mainly used for livestock grazing in combination with the mining activities on the property. The carrying capacity in the area is 6 ha per large stock unit. As mentioned earlier, the surrounding farms are also used for commercial purposes with Thaba 'Nchu bordering the farm Uitkomst No 558 to the west. Bodulo Lodge was established ±350 m east of the furthest corner of the mining area.

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

Table 7: Land uses and/or prominent features that occur 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**	-
High voltage power line	-	**NO**	No high voltage power lines cross into the mining area. However, the mining footprint does include low voltage power lines, of which the most noteworthy one is the line ±10 m from the southern boundary of Historic Excavation 2.
Office/consulting room	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
Military or police base / station / compound	-	**NO**	-
Spoil heap or slimes dam	-	**NO**	-
Quarry, sand or borrow pit	**YES**	**-**	The mining area has a hard rock quarry and borrow pits.
Dam or reservoir	**YES**	**-**	Farm dams occur on the property; however none are present within the mining footprint.
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	-	**NO**	-
Major road (4 lanes or more)	-	**NO**	The N8 that borders the site to the south does not have 4 or more lanes.
Airport	-	**NO**	-
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 used for grazing of livestock.
River, stream, or wetland	-	**NO**	-
Nature conservation area	-	**NO**	-
Mountain, hill, or ridge	**YES**	-	The topography of the area is undulating and various hills and the Thaba 'Nchu Mountain occur in the area.
Museum	-	**NO**	-
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 following table presents the potential positive and negative impacts associated with this project, identified for each main activity in each applicable phase. Also refer to Appendix C for the Environmental Impact Statement.

The impacts listed below were not re-assessed *per se* as no significant additions / changes to the mining activities were identified that were not already assessed during the mining right application process and subsequently approved by the DMRE. Subsequently Table 8 presents the relevant impacts (that may arise during the operational and/or decommissioning phase of this project) with an updated list of mitigation/management measures to be implemented on site. For compliance monitoring and performance assessment auditing refer to the *Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including headings (l) – (m).*

Table 8: Positive and negative impacts associated with the project proposal.

ACTIVITY	PHASE	POTENTIAL IMPACT
➢ Stripping and stockpiling of topsoil and/or overburden.	➢ Operational Phase	➢ Visual intrusion because of the activities.
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Operational Phase	➢ Dust nuisance due to the movement of the soil. ➢ Dust nuisance caused by blasting activities. ➢ Dust nuisance caused by earthmoving machinery.
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Operational Phase	➢ Noise nuisance caused by earthmoving machinery. ➢ Noise nuisance caused by blasting activities. ➢ Noise nuisance because of the mining activities.
➢ Stripping and stockpiling of topsoil and/or overburden.	➢ Operational Phase ➢ Decommissioning Phase	➢ Potential contamination of footprint area and surface runoff because of hydrocarbon spillages.

ACTIVITY	PHASE	POTENTIAL IMPACT
➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.		➢ Soil contamination from hydrocarbon spills and/or littering. ➢ Potential impact associated with litter/hydrocarbon spills left at the mining area.
➢ Stripping and stockpiling of topsoil and/or overburden.	➢ Operational Phase	➢ Loss of vegetation cover.
➢ Stripping and stockpiling of topsoil and/or overburden.	➢ Operational Phase	➢ Potential impact on faunal species.
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.	➢ Operational Phase ➢ Decommissioning Phase	➢ Infestation of the topsoil heaps and mining area with invader plant species. ➢ Infestation of the mining area with invader plant species. ➢ Infestation of the reinstated area with invader plant species.
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Sloping and landscaping during rehabilitation.	➢ Operational Phase ➢ Decommissioning Phase	➢ Potential increase in runoff from denuded areas and associated erosion. ➢ Erosion of returned topsoil after rehabilitation.
➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Operational Phase	➢ Alteration of the existing topography. ➢ Alteration of the existing topography.
➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.	➢ Operational Phase	➢ Health and safety risk posed by blasting activities. ➢ Unsafe working environment for employees. ➢ Health and safety risk posed by unrehabilitated quarry excavations.
➢ Excavation, processing, loading and hauling of aggregate.	➢ Operational Phase	➢ Overloading of trucks having an impact on the public roads.

ACTIVITY	PHASE	POTENTIAL IMPACT
➢ Excavation, processing, loading and hauling of aggregate.	➢ Operational Phase	➢ Continued employment opportunities. (Positive Impact)
➢ Excavation, processing, loading and hauling of aggregate.	➢ Operational Phase	➢ Continued provision of building/road material to the region. (Positive Impact)
➢ Excavation, processing, loading and hauling of aggregate.	➢ Operational Phase	➢ Continued social support to the local community. (Positive Impact)

b) IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

Table 9: Impacts to be mitigated in their respective phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Stripping and stockpiling of topsoil and/or overburden.	Operational Phase	±20 ha	<u>Visual Characteristic</u> ➢ The site must always have a neat appearance and be kept in good condition. ➢ Mining equipment must be stored neatly in dedicated areas when not in use. ➢ 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. ➢ All excavation and mining related activities must be contained within the approved mining footprint. ➢ 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. ➢ 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: ➢ MPRDA, 2008 ➢ NEMA, 1998	Throughout the operational phase.
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Drilling and blasting.	Operational Phase	±20 ha	<u>Air Quality and Noise Ambiance – Dust Management</u> ➢ The liberation of dust into the surrounding environment must be effectively controlled using, inter alia, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products). ➢ Dust suppression must continue during day and night shifts.	Dust generation on site must be managed in accordance with the: ➢ NEM:AQA, 2004 Regulation 6(1) ➢ National Dust Control Regulations, GN No R827	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Excavation, processing, loading and hauling of aggregate.			➢ Water sprayers must be fitted to the processing plant, and the plant may not operate if these sprayers are out of order. ➢ The site manager must daily assess the efficiency of all dust suppression equipment. ➢ Excess dust and fines must at least weekly be removed from the processing area. ➢ Speed on the haul roads must be limited to 20 km/h to prevent the generation of excess dust. ➢ 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. ➢ 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. ➢ 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). ➢ Best practice measures shall be implemented during the stripping of topsoil, excavation, and transporting of material from site to minimize potential dust impacts.	➢ ASTM D1739 (SANS 1137:2012)	
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Drilling and blasting.	Operational Phase	±20 ha	<u>Air Quality and Noise Ambiance – Noise Management</u> ➢ The MR Holder must ensure that employees and staff conduct themselves in an acceptable manner while on site. ➢ No loud music may be permitted at the work areas. ➢ All project vehicles must be equipped with silencers and maintained in a road worthy condition in terms of	Noise generation on site must be managed in accordance with the: ➢ NEM:AQA, 2004 Regulation 6(1) ➢ NRTA, 1996	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Excavation, processing, loading and hauling of aggregate.			the National Road Traffic Act, 1996 (Act No 93 of 1996). ➢ 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. ➢ 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. ➢ 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. ➢ Best practice measures shall be implemented to minimize potential noise impacts.		
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate.	Operational-, and Decommissioning Phase	±20 ha	<u>Waste Management</u> ➢ Regular vehicle maintenance, repairs and services may only take place at the workshop and service area. If emergency repairs are needed on equipment not 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	Project related waste must be managed in accordance with the: ➢ NWA, 1998 ➢ 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
➢ Sloping and landscaping during rehabilitation.			registered hazardous waste handling facility, alternatively collected by a registered hazardous waste handling contractor. The safe disposal certificates must be filed for auditing purposes. ➢ Ablution facilities must be provided to all employees. The toilet must be placed outside the 1:100 year floodline of all watercourses. ➢ 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. ➢ 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. ➢ Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site. 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. ➢ 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.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ An oil spill kit 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. ➢ 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 recognised facility. Proof must be filed. ➢ 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. ➢ 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. ➢ All decommissioned/rehabilitated areas must be cleared of all waste at the end of the project.		
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate.	Operational Phase	±20 ha	<u>Storage / Handling of Hazardous Substances / Chemicals</u> ➢ All hazardous chemical storage areas 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. ▪ Include spill kits and emergency response procedures, with training provided to staff.	Project related chemicals/products must be managed in accordance with the: ➢ HSA, 1973	Throughout the operational and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ Access to the chemicals/substances must be controlled and require prior notification of an appropriate staff member. ➢ The storage area must be out of the 1:100 year floodline or further than 100 m from the edge of a watercourse, whichever is greatest. ➢ A Hazardous Substances Register must be maintained, and Safety Data Sheets (SDS) must be kept current for all chemicals used on site. ➢ 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. The distance and height of the bund wall relative to that of the tank must also be taken into consideration to ensure that any spillage does not result in hydrocarbons/other substances spouting beyond the confines of the bund. ➢ The outlet valve/s of all bunded areas must always be kept closed. ➢ 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 contaminated water. All valves and outlets must be checked to ensure that its intact and closed securely. ➢ The bund base must slope towards an oil sump of sufficient size. Contaminated water may not be allowed to mix with clean water and must be contained		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			until it is collected by a registered hazardous waste handling contractor or disposed of at a registered hazardous waste handling facility. ➢ 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. ➢ No mining equipment and/or vehicles may be washed on the bare ground. Washing must be done in a formal wash bay with impermeable surface that drains to an operational oil sump.		
➢ Stripping and stockpiling of topsoil and/or overburden.	Operational Phase	±20 ha	<u>Terrestrial Biodiversity and Groundcover – Management of Vegetation</u> ➢ 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. ➢ The Right Holder must be committed to a conservation approach and the actual footprint of disturbance must be kept to a minimum. ➢ 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.	Natural vegetated areas must be managed in accordance with the: ❖ NEM:BA 2004	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ 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. ➢ The ECO must provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially during the site establishment phase, when most of the vegetation clearing is taking place. ➢ All vehicles must remain on demarcated roads and no unnecessary driving in the veld outside these areas may be allowed. ➢ No fires must be allowed on-site. ➢ Spoil heaps and topsoil stockpiles must be provided with a vegetation cover of indigenous grasses. ➢ All newly vegetated areas must be protected against grazing by domestic animals. ➢ 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.		
➢ Stripping and stockpiling of topsoil and/or overburden.	Operational Phase	±20 ha	<u>Fauna</u> ➢ The site manager must ensure no fauna is caught, killed, harmed, sold, or played with. ➢ Any fauna directly threatened by the operational activities must be removed to a safe location by the ECO or other suitably qualified person.	Fauna must be managed in accordance with the: ❖ NEM:BA 2004	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ The handling and relocation of any animal perceived to be dangerous/venomous/poisonous must be undertaken by a suitably trained individual. ➢ 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. ➢ No snares may be set, or nests raided for eggs or young. ➢ 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.		
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.	Operational- and Decommissioning Phase	±20 ha	<u>Terrestrial Biodiversity and Ground Cover – Management of Invasive Plant Species</u> ➢ 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). Weed/alien clearing must be done on an ongoing basis throughout the life of the activities. ➢ No planting or importing of any alien species to the site for landscaping, rehabilitation or any other purpose may be allowed.	Weeds and invader plants on site must be managed in accordance with the: ➢ CARA, 1983 ➢ 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
			➢ All stockpiles (topsoil & overburden) must be kept free of invasive plant species. ➢ Management must take responsibility to control declared invader or exotic 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.		
➢ Stripping and stockpiling of topsoil and/or aggregate.	Operational-, and Decommissioning Phase	±20 ha	<u>Geology and Soil – Topsoil Management</u> ➢ The upper 300 mm of the soil (if available) must be stripped and stockpiled before mining. ➢ 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. ➢ 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. ➢ 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. ➢ Topsoil stockpiles must be protected against losses by water- and wind erosion. Stockpiles must be positioned so as not to be vulnerable to erosion by	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
			wind and water. The establishment of plants (indigenous grass) on the stockpiles will help to prevent erosion. ꞵ Topsoil heaps may not exceed 2 m in height and are not to be sloped more than 1:2 to avoid collapse. ꞵ The temporary topsoil stockpiles must be kept free of invasive plant species. ꞵ 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. ꞵ Storm- and runoff water must be diverted around the topsoil and overburden stockpile areas to prevent erosion. ꞵ The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site. ꞵ 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. ꞵ 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.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ Run-off water must be controlled via temporary berms, where necessary, on the slopes to ensure that accumulation of run-off does not cause down-slope erosion. ➢ The rehabilitated area must be monitored for erosion and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.		
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Sloping and landscaping during rehabilitation.	Operational-, and Decommissioning Phase	±20 ha	<u>Geology and Soil – Erosion Control and Storm Water Management</u> ➢ A storm water management plan must be implemented for the duration of the mining activities. ➢ Clearing of vegetation must be limited to the mining footprint and associated infrastructure. No clearing outside of the minimum required footprint to take place. ➢ Vegetation clearing activities must be put on hold when heavy rains are expected. ➢ Stormwater must be diverted around the topsoil heaps and mining areas to prevent erosion. ➢ Stockpiles must be: ▪ Located on flat, stabilised areas away from drainage lines, ▪ Surrounded by berms of at least 1 m high to prevent runoff, ▪ Covered with vegetation to reduce wind and water erosion risks. ➢ When mining within steep slopes, it must be ensured that adequate slope protection is provided. ➢ Roads and other disturbed areas within the project area must be regularly monitored for erosion and	Soil must be managed in accordance with the: ➢ CARA, 1983 ➢ Closure Plan (Appendix D) ➢ MPRDA, 2002 ➢ NEM:BA, 2004 ➢ 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. ꕥ 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. ꕥ Silt/sediment traps/barriers must be used where there is a danger of topsoil or material stockpiles eroding and entering downstream drainage lines and other sensitive areas. These sediment/silt barriers must regularly be maintained and cleared to ensure effective drainage of the areas. ꕥ 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. ▪ The statutory requirements of various regulatory agencies and the interests of stakeholders must		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			be considered and incorporated into a storm water management plan. ꞵ 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. ꞵ All erosion and sediment control measures must be monitored (weekly) for the life of the operation and repaired immediately when damaged. The erosion and sediment control structures may only be removed once vegetation cover has successfully recolonised the affected areas. ꞵ 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.		
ꞵ Drilling and blasting. ꞵ Excavation, processing, loading and hauling of aggregate. ꞵ Sloping and landscaping	Operational-, and Decommissioning Phase	80.9896 ha	<u>Health and Safety Risks</u> ꞵ Workers must have access to the correct personal protection equipment (PPE) as required by law. ꞵ Sanitary facilities must be located within 100 m from any point of work. ꞵ All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996). ꞵ The type, duration and timing of the blasting procedures must be planned with due cognizance of other land users and structures in the vicinity.	Health and safety aspects on site must be managed in accordance with the: ꞵ MHSA, 1996 ꞵ OHSA, 1993 ꞵ OHSAS 18001 ꞵ HSA,1973	Throughout the operational and decommissioning phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
during rehabilitation.			➢ The surrounding landowners must be informed in writing ahead of each blasting event. ➢ The compliance of ground vibration and airblast levels must be monitored to USBM standards with each blasting event. ➢ A vibro recorder must be used to record all blasts. ➢ Audible warning of a pending blast must be given at least 3 minutes in advance of the blast. ➢ 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. ➢ Upon closure the entrance to the excavation must be blocked (soil berm / oversize rocks) to restrict access.		
➢ Excavation, processing, loading and hauling of aggregate.	Operational Phase	±20 ha	<u>Access Road Management</u> ➢ Vehicular movement must be restricted to the roads and crisscrossing of tracks through undisturbed areas must be prohibited. ➢ New access roads must be avoided, if possible, but if unavoidable must be established in consultation with the landowner. ➢ Erection of new gates in the fence line must take place in consultation with the landowner. ➢ 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. ➢ 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.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Excavation, processing, loading and hauling of aggregate.	Operational Phase	±20 ha	<u>Cultural and Heritage Environment</u> ➢ All mining must be confined to the development footprint area. ➢ If during the pre-construction phase, construction, 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. ➢ 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.	Cultural/heritage aspects must be managed in accordance with the: ❖ NHRA, 1999	Throughout the operational phase.
➢ Sloping and landscaping	Decommissioning Phase	±20 ha	<u>Rehabilitation / Landscaping of the Excavated Areas</u>	The mining area must be managed in accordance with the:	Throughout the decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
during rehabilitation.			➢ Rehabilitation must be done to such a standard that the rehabilitated land (except hard rock quarry) can revert to grazing. ➢ The excavated areas must serve as a final depositing area for the placement of overburden. ➢ Rocks and coarse material removed from the excavations must be dumped into the excavations. ➢ Coarse natural material used for the construction of ramps must be removed and dumped into the excavations. ➢ Stockpiles must be removed during the decommissioning phase, the area ripped, and the topsoil returned to its original depth to provide a growth medium. ➢ No waste may be permitted to be deposited in the excavations. ➢ 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. ➢ 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. ➢ 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	➢ MPRDA, 2002	

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			be seeded with a vegetation seed mix to his or her specification. 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.		

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 sub-contractors), to ensure sound environmental management during the operational and decommissioning phases of the project.

1. MINING RIGHT HOLDER

The mining right holder, Thaba Stone (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 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 office before commencement of the mining activities and ensure that the name and contact details of the ECO is made available to the DMRE Regional Manager within 30 days of commencement. The holder of the mining right must also ensure that an ECO is always available on site to ensure that activities always comply 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 compliance 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 department 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.

H. IMPACT MANAGEMENT ACTIONS AND OUTCOMES

Table 10: Impact Management Actions and Outcomes.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
➢ Stripping and stockpiling of topsoil and/or overburden.	➢ Visual intrusion because of the activities.	The visual impact may affect the aesthetics of the landscape.	Operational Phase	Control: Implementing proper housekeeping and progressive rehabilitation (where possible).	Management of the activities must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Dust nuisance due to the movement of the soil. ➢ Dust nuisance caused by blasting activities. ➢ Dust nuisance caused by earthmoving machinery.	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: ➢ NEM:AQA, 2004 Regulation 6(1) ➢ National Dust Control Regulations, GN No R827 ➢ ASTM D1739 (SANS 1137:2012)
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Noise nuisance caused by earthmoving machinery. ➢ Noise nuisance caused by blasting activities. ➢ 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 Phase	Control: Noise suppression methods and proper housekeeping.	Noise generation on site must be managed in accordance with the: ➢ NEM:AQA, 2004 Regulation 6(1) ➢ NRTA, 1996

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.	➢ Potential contamination from footprint area and surface runoff because of hydrocarbon spillages. ➢ Soil contamination from hydrocarbon spills and/or littering. ➢ Potential impact associated with litter/hydrocarbon spills left at the mining area.	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	Control & Remedy: Proper housekeeping and implementation of an emergency response plan and waste management plan.	Project related waste must be managed in accordance with the: ➢ NWA, 1998 ➢ NEM:WA, 2008
➢ Stripping and stockpiling of topsoil and/or overburden.	➢ Loss of vegetation cover.	This will impact on the biodiversity of the receiving environment.	Operational Phase	Control: Implementing proper housekeeping and the mitigation measures.	Natural vegetated areas must be managed in accordance with the: ➢ NEM:BA 2004
➢ Stripping and stockpiling of topsoil and/or overburden.	➢ Potential impact on faunal species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	Control: Implementing proper housekeeping and the mitigation measures.	Fauna must be managed in accordance with the: ❖ NEM:BA 2004
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Infestation of the topsoil heaps and mining area with invader plant species. ➢ Infestation of the mining area with invader plant species. ➢ Infestation of the reinstated area with invader plant species.	Infestation of the footprint by invader plant species may affect the biodiversity of the receiving environment.	Operational, and Decommissioning Phase	Control & Remedy: Implementation of an invasive plant species management plan.	Weeds and invader plants on site must be managed in accordance with the: ➢ CARA, 1983 ➢ NEM:BA, 2004

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
➢ Sloping and landscaping during rehabilitation.					
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.	➢ Potential increase in runoff from denuded areas and associated erosion. ➢ Erosion of returned topsoil after rehabilitation.	This could impact the hydrology of the receiving environment and cause erosion.	Operational Phase.	<u>Control:</u> Implementing a SWMP.	Soil must be managed in accordance with the: ➢ CARA, 1983 ➢ Closure Plan (Appendix D) ➢ MPRDA, 2002 ➢ NEM:BA, 2004 ➢ NWA, 1998
➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Alteration of the existing topography. ➢ 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: ➢ MPRDA, 2002
➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.	➢ Health and safety risk posed by blasting activities. ➢ Unsafe working environment for employees. ➢ 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: ➢ MHSA, 1996 ➢ OHSA, 1993 ➢ OHSAS 18001 ➢ HSA,1973

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
➢ Excavation, processing, loading and hauling of aggregate.	➢ 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	Operational and Expansion Activities: Excavation, processing, loading and hauling of aggregate.	The access road must be managed in accordance with the: ➢ 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 11: 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
➢ Demarcation of site with visible beacons.	<u>General</u> ➢ Maintenance of beacons.	➢ Visible beacons / fences need to be established at the boundaries of the mining area. ➢ Safety berm around hard rock quarry.	<u>Responsible Person:</u> ➢ Site Manager to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent Environmental Control Officer (ECO) during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> ➢ Ensure beacons / fences are in place throughout the life of the mine.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management and ECO. ➢ 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
➢ Stripping and stockpiling of topsoil and/or overburden.	<u>Visual Characteristics</u> ➢ Visual intrusion because of the expansion activities.	➢ Parking- and dedicated storage areas for equipment. ➢ Good housekeeping practices.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> ➢ Ensure that the site has a neat appearance and is always kept in good condition. ➢ Store mining equipment neatly in dedicated areas when not in use. ➢ Limit vegetation removal and only do stripping of topsoil immediately prior to the mining/use of a specific area. ➢ Contain the excavation within the approved footprint of the permitted area. ➢ Upon closure, rehabilitate the site and reduce the residual visual impacts to the minimum. ➢ 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. ➢ Daily compliance monitoring by site management and ECO. ➢ Annual compliance monitoring by independent EAP.
➢ Stripping and stockpiling of topsoil and/or overburden.	<u>Air Quality and Noise Ambiance</u> ➢ Dust nuisance due to the movement of soil.	➢ Dust suppression equipment such as a water car, water dispenser and sprayers on the crusher plant.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit.	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
➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	➢ Dust nuisance caused by blasting activities. ➢ Dust nuisance caused by earthmoving machinery.	➢ Signage that clearly reduce the speed on the access roads. ➢ Maintenance schedule to remove excess dust from the processing area. ➢ Cover crop to re-vegetate denuded areas.	<u>Mitigation / Monitoring to be Implemented:</u> ➢ Control the liberation of dust into the surrounding environment using; inter alia, water spraying and/or other dust-allaying agents. ➢ Ensure dust suppression continue during day and night shifts. ➢ Fit water sprayers to the processing plant and stop operations if the sprayers are out of order. ➢ Ensure continuous (daily) assessment of all dust suppression equipment to confirm its effectiveness in addressing dust suppression. ➢ Remove excess dust and fines at least weekly from the processing area. ➢ Limit speed on the haul roads to 20 km/h to prevent the generation of excess dust. ➢ Minimise areas devoid of vegetation and only remove vegetation immediately prior to mining. ➢ Consider weather conditions upon commencement of daily operations. Limit operations during very windy periods to reduce airborne dust and resulting impacts. ➢ Ensure dust generating activities comply with the National Dust Control Regulations, (GN No R827) under NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012). ➢ Implement best practice measures during the stripping of topsoil, excavation, and transporting of material from site to minimize potential dust impacts.	➢ Daily compliance monitoring by site management and ECO. ➢ Weekly monitoring of dust and fines at the processing area. ➢ 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
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	<u>Air Quality and Noise Ambiance</u> ➢ Noise nuisance caused by earthmoving machinery. ➢ Noise nuisance caused by blasting activities. ➢ Noise nuisance because of the mining activities.	➢ Personal noise exposure monitoring equipment. ➢ Signage indicating noise zones. ➢ Silencers fitted to all project related vehicles, and the use of vehicles that are in road worthy condition in terms of the National Road Traffic Act, 1996.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> ➢ Ensure that employees and staff conduct themselves in an acceptable manner while on site. ➢ No loud music may be permitted at the mining area. ➢ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996. ➢ 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. ➢ 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. ➢ 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.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management and ECO. ➢ Quarterly reporting by a qualified occupation hygienist. ➢ 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
			➢ Implement best practice measures to minimise potential noise impacts.	
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and hauling of aggregate. ➢ Sloping and landscaping during rehabilitation.	<u>Waste Management</u> ➢ Potential contamination of footprint area and surface runoff because of hydrocarbon spillages. ➢ Soil contamination from hydrocarbon spills and/or littering. ➢ Potential impact associated with litter/hydrocarbon spills left at the mining area.	➢ Waste management plan. ➢ Formal waste disposal system with waste registers. ➢ Drip trays. ➢ Covered refuse bins for both hazardous- and general waste. ➢ Oil spill kit. ➢ Bunded areas with impermeable surface. ➢ Stormwater management plan.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> ➢ Ensure regular vehicle maintenance, repairs and services only take place at an off-site workshop and service area. Ensure drip trays are present if emergency repairs are needed on equipment not able to move to the workshop. Dispose all waste products in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal. Treat this as hazardous waste and dispose of it at a registered hazardous waste handling facility, alternatively arrange collection by a registered hazardous waste handling contractor. File safe disposal certificates for auditing purposes. ➢ Provide ablution facilities to all employees. The toilet must be placed outside the 1:100 year floodline of all watercourses. ➢ 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	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management and ECO. ➢ 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
			problems arising from the above are to be addressed immediately by the MR Holder. ꕥ 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. ꕥ Ensure drip trays are cleaned after each use. Do not allow dirty drip trays to be used on site. 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. ꕥ 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. ꕥ Obtain an oil spill kit and train the employees in the emergency procedures to follow when a spill occurs as well as the application of the spill kit. ꕥ 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. ꕥ Do not discharge water containing waste into the natural environment. ꕥ Implement measures to contain the wastewater and safely dispose thereof. ꕥ Report any significant spillage of chemicals, fuels etc. during the lifespan of the mining activities to the	

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
			Department of Water and Sanitation and other relevant authorities. Clean all decommissioned / rehabilitated areas of all waste at the end of the project.	
Stripping and stockpiling of topsoil and/or overburden. Excavation, processing, loading and hauling of aggregate. Sloping and landscaping during rehabilitation.	<u>Storage / Handling of Hazardous Substances / Chemicals</u> Potential contamination of footprint area and surface runoff because of hydrocarbon spillages. Soil contamination from hydrocarbon spills and/or littering. Potential impact associated with litter/hydrocarbon spills left at the mining area.	Waste management plan. Formal waste disposal system with waste registers. Drip trays. Covered refuse bins for both hazardous- and general waste. Oil spill kit. Bunded areas with impermeable surface. Safety Data Sheets Formal inspection routine/programme.	<u>Responsible Person:</u> Site Manager and ECO to ensure day-to-day compliance. Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> Ensure that all hazardous chemical storage areas 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. ▪ include spill kits and emergency response procedures, with training provided to staff. Ensure the floor of the storage area is impermeable to prevent seepage of spilled products into the ground or ground water. Control access to the chemicals/substances and require prior notification of an appropriate staff member. Ensure the storage area is out of the 1:100 year floodline or further than 100 m from the edge of a watercourse, whichever is greatest.	Applicable throughout operational-, and decommissioning phases. Daily compliance monitoring by site management and ECO. 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
			➢ Maintain a Hazardous Substances Register and keep the Safety Data Sheets (SDS) current for all chemicals used on site. ➢ 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. The distance and height of the bund wall relative to that of the tank must also be taken into consideration to ensure that any spillage does not result in hydrocarbons/other substances spouting beyond the confines of the bund. ➢ Ensure that the outlet valve/s of all bunded areas are always kept closed. ➢ 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 contaminated water. All valves and outlets must be checked to ensure that its intact and closed securely. ➢ Ensure that the bund base slope towards an oil sump of sufficient size. Contaminated water may not be allowed to mix with clean water and must be contained until it is collected by a registered hazardous waste handling contractor or disposed of at a registered hazardous waste handling facility. ➢ Use drip trays underneath all stationary equipment or vehicles. Used drip trays must be placed within a bunded	

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
			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. ꕥ Do not wash mining equipment and/or vehicles on the bare ground. Washing must be done in a formal wash bay with impermeable surface that drains to an operational oil sump.	
ꕥ Stripping and stockpiling of topsoil and/or overburden.	<u>Terrestrial biodiversity, and groundcover</u> ꕥ Loss of vegetation cover.	ꕥ Visible beacons / fences indicating the boundary of the mineable areas. ꕥ Environmental awareness training material. ꕥ Fire management plan. ꕥ Alien invasive species management plan. ꕥ Cover crop to seed rehabilitated areas.	<u>Responsible Person:</u> ꕥ Site Manager and ECO to ensure day-to-day compliance. ꕥ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> ꕥ 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. ꕥ Commit to a conservation approach and keep the actual footprint of disturbance to a minimum. ꕥ Arrange environmental induction for all staff on site to ensure that basic environmental principles are adhered to. This must include awareness of no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimising wildlife interactions, remaining within demarcated areas, etc.	Applicable throughout and operational phase. ꕥ Daily compliance monitoring by site management and ECO. ꕥ 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
			➢ 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. ➢ Arrange that the ECO provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially during the site establishment phase, when most of the vegetation clearing is taking place. ➢ Ensure all vehicles remain on demarcated roads and prevent unnecessary driving in the veld outside these areas. ➢ Do not allow fires on-site. ➢ Provide spoil heaps and topsoil stockpiles with a vegetation cover of indigenous grasses. ➢ Protect all newly vegetated areas against grazing by domestic animals. ➢ 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.	
➢ Stripping and stockpiling of topsoil and/or overburden.	<u>Fauna</u> ➢ Potential impact on faunal species.	➢ Visible beacons / fences indicating the boundary of the mineable areas. ➢ Environmental awareness training material.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit.	Applicable throughout operational phase. ➢ Daily compliance monitoring by site management and ECO.

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
		➢ Snake posters. ➢ Refuse bins with lids.	<u>Mitigation / Monitoring to be Implemented:</u> ➢ Ensure no fauna is caught, killed, harmed, sold, or played with. ➢ The ECO or other suitably qualified person must remove any fauna directly threatened by the operational activities to a safe location. ➢ Arrange a suitably qualified individual to handle and relocation any animal perceived to be dangerous/venomous/poisonous. ➢ 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. ➢ Ensure no snares are set or nests raided for eggs or young. ➢ Prevent litter, food or other foreign material thrown or left around the site. Daily remove such items to the site offices.	➢ Annual compliance monitoring by independent EAP.
➢ Stripping and stockpiling of topsoil and/or overburden. ➢ Excavation, processing, loading and	<u>Terrestrial biodiversity, and groundcover</u> ➢ Infestation of the topsoil heaps and mining area with	➢ Alien invasive plant species management plan. ➢ Designated team to cut or pull-out invasive plant	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management and ECO.

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
hauling of aggregate. Sloping and landscaping during rehabilitation.	invader plant species. Infestation of the mining area with invader plant species. Infestation of the reinstated area with invader plant species.	species that germinated on site. Contact details of a Pest Control Officer.	<u>Mitigation / Monitoring to be Implemented:</u> 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 weed/alien ongoing clearing on throughout the life of the mining activities. Do not allow planting or importing of any alien species to the site for landscaping, rehabilitation, or any other purpose. Keep all stockpiles (topsoil & overburden) free of invasive plant species. Control declared invader or exotic 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.	Annual compliance monitoring by independent EAP.
Stripping and stockpiling of topsoil and/or aggregate.	<u>Geology and Soil</u> Topsoil/Soil Management.	Earthmoving equipment to strip, stockpile and spread the topsoil. Stormwater control infrastructure. Designated team to control weeds/invader plant species that may	<u>Responsible Person:</u> Site Manager and ECO to ensure day-to-day compliance. Compliance to be monitored by the independent EAP during the annual environmental audit.	Applicable throughout operational phase. Daily compliance monitoring by site management and ECO.

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
		germinate on the topsoil heaps. • Cover crop to vegetate topsoil heaps (when needed) and reinstated soil.	<u>Mitigation / Monitoring to be Implemented:</u> • Strip and stockpile the upper 300 mm (if available) of the soil before mining. • Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. • 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. • Place the topsoil on a levelled area, within the mining footprint. Do not stockpile topsoil in undisturbed areas. • Protect topsoil stockpiles against losses by water- and wind erosion. Position stockpiles so it is not vulnerable to erosion by wind and water. The establishment of plants (indigenous grass) on the stockpiles will help to prevent erosion. • Ensure that topsoil heaps do not exceed 2 m and not sloped more than 1:2 to avoid collapse. • Keep temporary topsoil stockpiles free of invasive plant species. • 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. • Divert storm- and runoff water around the on-site stockpile area to prevent erosion. • Spread the topsoil evenly, to a depth of 300 mm, over the rehabilitated area upon closure of the site. • Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as	• 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
			possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. • 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. • Control run-off water with temporary banks, where necessary, to prevent accumulation of run-off causing down-slope erosion. • Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
• Stripping and stockpiling of topsoil and/or overburden. • Sloping and landscaping during rehabilitation.	<u>Geology and Soil</u> • Potential increase in runoff from denuded areas and associated erosion. • Erosion of returned topsoil after rehabilitation.	• Stormwater management plan. • Storm water control structures such as berms to direct storm- and runoff water around the stockpiled topsoil area.	<u>Responsible Person:</u> • Site Manager and ECO to ensure day-to-day compliance. • Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> • Implement a storm water management plan for the duration of the mining activities. • Limit clearing of vegetation to the mining footprint and associated infrastructure. Ensure no clearing takes place outside the minimum required footprint. • Place vegetation clearing on hold when heavy rains are expected.	Applicable throughout operational-, and decommissioning phases. • Daily compliance monitoring by site management and ECO. • 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
			➢ Divert stormwater around the topsoil heaps and mining areas to prevent erosion. ➢ Implement the following regarding stockpiles: ▪ Locate on flat, stabilised areas away from drainage lines, ▪ Surround stockpiles by berms of at least 1 m high to prevent runoff, ▪ Cover with vegetation to reduce wind and water erosion risks. ➢ Ensure that adequate slope protection is provided when mining within steep slopes. ➢ 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. ➢ 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. ➢ Use silt/sediment traps/barriers where there is a danger of topsoil or material stockpiles eroding and entering downstream drainage lines and other sensitive areas. Regularly maintain and clear the sediment/silt barriers to ensure effective drainage of the areas. ➢ Conduct activity in terms of the Best Practice Guidelines for small-scale mining as developed by DWS: ▪ 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.	

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			▪ 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. ▪ The statutory requirements of various regulatory agencies and the interests of stakeholders must be considered and incorporated into a storm water management plan. ꕥ 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. ꕥ 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. ꕥ 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	
ꕥ Drilling and blasting. ꕥ Excavation, processing, loading and	<u>Health and Safety Risks</u> ꕥ Health and safety risk posed by blasting activities.	ꕥ Stocked first aid box. ꕥ Level 1 certified first aider.	<u>Responsible Person:</u> ꕥ Site Manager and ECO to ensure day-to-day compliance. ꕥ Compliance to be monitored by the independent EAP during the annual environmental audit.	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
hauling of aggregate. Sloping and landscaping during rehabilitation.	Unsafe working environment for employees. Health and safety risk posed by unrehabilitated quarry excavations.	All appointments in terms of the Mine Health and Safety Act, 1996.	<u>Mitigation / Monitoring to be Implemented:</u> Ensure that workers have access to the correct PPE as required by law. Locate sanitary facilities within 100 m from any point of work. Manage all operations in compliance with the Mine Health and Safety Act, 1996 (Act No 29 of 1996). Plan the type, duration, and timing of blasting with due cognizance of other land users and structures in the vicinity. Inform the surrounding landowners and communities in writing ahead of any blasting event. Monitor the compliance of ground vibration and airblast levels to USBM standards with each blasting event. Record all blasts with a vibro recorder. Give audible warning of a pending blast at least 3 minutes in advance of the blast. Limit fly rock and collect and remove flyrock and rock spill that falls beyond the working area. Block the entrance into the excavation upon closure to restrict access.	Daily compliance monitoring by site management and ECO. Annual compliance monitoring by independent EAP.
Excavation, processing, loading and hauling of aggregate.	<u>Existing Infrastructure</u> Overloading of trucks having an impact on the public roads.	Earthmoving equipment to maintain the gravel pavement structure of the roads.	<u>Responsible Person:</u> Site Manager and ECO to ensure day-to-day compliance. Compliance to be monitored by the independent EAP during the annual environmental audit.	Applicable throughout operational phase. Daily compliance monitoring by site management and ECO.

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
		➢ Road signage to control traffic speed. ➢ Proof of load weights to prevent overloading.	<u>Mitigation / Monitoring to be Implemented:</u> ➢ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. ➢ Avoid making new access roads, if possible, but if unavoidable establish the roads in consultation with the landowner. ➢ Only place new gates in the fence line in consultation with the landowner. ➢ Repair rutting and erosion of the access road caused as a direct result of the mining activities. ➢ Prevent the overloading of the truck and file proof of load weights for auditing purposes.	➢ Annual compliance monitoring by independent EAP.
➢ Excavation, processing, loading and hauling of aggregate.	<u>Cultural and Heritage Environment</u> ➢ Archaeological, Heritage and Palaeontological Aspects.	➢ Contact number of an archaeologist & palaeontologist that can be contacted when a discovery is made on site.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> ➢ Confine all mining to the development footprint area. ➢ Implement the following change find procedure when discoveries are made on site: ▪ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its	Applicable throughout operational phase. ➢ Daily compliance monitoring by site management and ECO. ➢ 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
			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. ▪ 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.	
➢ Excavation, processing, loading and hauling of aggregate.	<u>Fire Management</u> Increased fire risk during operational phase.	➢ Fire beaters and -extinguishers. ➢ Toolbox talks and emergency preparedness plan.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit.	Applicable throughout operational phase. ➢ Daily compliance monitoring by site management and ECO.

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
		➢ Contact number of the fire association/-brigade.	<u>Mitigation / Monitoring to be Implemented:</u> ➢ Restrict contained fires for heating and cooking (i.e. in a fire drum) to designated areas at the site camp, ➢ Prevent employees from setting fires randomly outside designated areas. ➢ Do not store fuel or chemicals under trees. ➢ Do not store gas in the same storage area as liquid fuel. ➢ Designate smoking to specific areas (>3 m from fuel or chemical storage areas) equipped with sand buckets for the disposal of cigarette buds. ➢ 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. ➢ 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, ➢ Report any fires noted on site to the responsible SHE rep and/or fire officer. ➢ Implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases. ➢ 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.	➢ 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
➢ Drilling and blasting. ➢ Excavation, processing, loading and hauling of aggregate.	<u>Topography</u> ➢ Alteration of the existing topography.	➢ Earthmoving equipment to rehabilitate mined areas.	<u>Responsible Person:</u> ➢ Site Manager and ECO to ensure day-to-day compliance. ➢ Compliance to be monitored by the independent EAP during the annual environmental audit. <u>Mitigation / Monitoring to be Implemented:</u> ➢ Implement rehabilitation to such a standard that the rehabilitated land (except hard rock quarry) can revert to grazing. ➢ Use the excavated areas for the final depositing of overburden. ➢ Dump rocks and coarse material removed from the excavations into the excavations. ➢ Remove coarse natural material used for the construction of ramps and dump it into the excavations. ➢ Remove stockpiles during the decommissioning phase, rip the area and return the topsoil to its original depth to provide a growth medium. ➢ Do not permit any waste to be deposited into the excavations. ➢ Return the previously stored topsoil to its original depth, once overburden, rocks and coarse natural materials have been added to the excavations and it was profiled with acceptable contours and erosion control measures. ➢ Seed the site with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora,	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management and ECO. ➢ 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

			should natural vegetation not re-establish within six months from closure of the site.
			- 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.
			- 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.	

(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/her to familiarise him/herself with. Issues such as activity boundaries, waste management, dust and vegetation principals will be discussed. The operations manager must ensure that he/she 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.

- **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.

- **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.

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.

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.

Discoveries

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

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.

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.

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.

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 (2024) reassessment of the financial provision of the Quarry is attached to this document as Appendix F *(note: non-public document and therefore not attached to the draft EMPR)*.

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:

27 May 2025

Date:

S. UNDERTAKING BY MINING RIGHT HOLDER

I,…….…….the undersigned and duly authorised thereto by……*Thaba Stone (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 THE 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 …… 2025…….

_____

REGIONAL MANAGER
FREE STATE

Undertaking/eg

-END-

APPENDIX A

REGULATION 42 MINE PLAN

APPENDIX B

GENERAL SURFACE PLAN

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

CV AND EXPERIENCE RECORD OF EAP