

PROPOSED EXPANSION OF THE PARKING AREA AT THE SHAFT 16 COMPLEX, IMPALA PLATINUM MINE, RUSTENBURG OPERATION - REVISED BASIC ASSESSMENT REPORT

Prepared for: Impala Platinum Limited
Authority References:

DMRE References:

NW-00296-MR/102 | NW 30/5/1/2/2/131MR



DOCUMENT INFORMATION

Title	Proposed Expansion of the Parking Area at the Shaft 16 Complex, Impala Platinum Mine, Rustenburg Operation – <u>Revised</u> Basic Assessment Report
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Keywords	Impala, BAR, Rustenburg
Status	<u>Final issued for DMRE Decision-Making</u>
Report No.	2
SLR Company	SLR Consulting (Africa) (Pty) Ltd
DMRE References:	NW-00296-MR/102 NW 30/5/1/2/2/131MR

DOCUMENT REVISION RECORD

Rev No.	Issue Date	Description	Issued By
0	November 2021	Final issued for DMRE Decision-Making	R. Baker

REPORT SIGN OFF AND APPROVALS



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Ed Perry
(Reviewer)

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EXECUTIVE SUMMARY

PROJECT BACKGROUND

Impala Platinum Limited (Impala), a member of the Implats group of companies, operates a platinum group metals (PGM) mining and processing operation located approximately 16 km north-north-west of the town of Rustenburg, in the Rustenburg Local Municipality (RLM) and the Bojanala Platinum District Municipality (BPDM), North West province.

Impala holds and operates in accordance with the following authorisations:

- An amended Mining Right (MR) issued in terms of the Mineral and Petroleum Resources Development Act, 28 of 2002 (MPRDA) (Department of Mineral Resources and Energy (DMRE) (previously the Department of Mineral Resources (DMR)) Ref: NW-00194-MR/102) issued on 13 December 2018; and
- An approved consolidated Environmental Management Programme (EMPr) issued in terms of the MPRDA (DMRE (previously the DMR) Ref: NW30/5/1/2/3/2/1/130,131,132 and 133 EM) issued on 20 August 2013.

Impala's Shaft 16 Complex is located on the farm Reinkoyalskraal 278 JQ and comprises of a vertical hoisting shaft, an upcast ventilation shaft, waste rock dump (WRD), run of mine and stockpile areas, and various ancillary support services, including an office complex, stores and parking area. As part of its on-going mine planning, Impala is proposing to expand the existing parking area with additional covered parking bays, inclusive of a dedicated taxi pick-up, drop-off and waiting area (proposed project).

SUMMARY OF AUTHORISATION REQUIREMENTS

Prior to the commencement of the proposed project, the following is required:

- An amended EMPr in terms of Section 102 of the MPRDA from the DMRE; and
- An Environmental Authorisation (EA) in terms of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) promulgated under the National Environmental Management Act, 107 of 1998 (NEMA) from the DMRE.

SLR Consulting (Africa) (Pty) Ltd (SLR), an independent firm of Environmental Assessment Practitioners (EAPs), has been appointed by Impala to manage the amended EMPr and EA processes.

OPPORTUNITY FOR COMMENT

The Basic Assessment Report (BAR) was distributed for a 30-day comment period from 8 September to 8 October 2021 in order to provide Interested and Affected Parties (I&APs) with an opportunity to comment on any aspect of the Basic Assessment (BA) process and the proposed project. An extension to the comment period was also granted until 27 October 2021. Copies of the full report were made available on the SLR website (www.slrconsulting.com) and the SLR data-free website (<https://slrpublicdocs.datafree.co/public-documents>). All comments received during the comment period have been included in this revised BAR, which has been submitted to the DMRE for consideration and decision-making. It should be noted that all significant changes to the BAR are underlined and in a different font (Times New Roman) to the rest of the text, for ease of reference and understanding.

SUMMARY OF IDENTIFIED IMPACTS AND SIGNIFICANCE

The potential impacts associated with the project activities and infrastructure can be categorised into those that have very low, low, medium, high, very high or insignificant significance in the unmitigated scenario. A summary of the identified impacts is provided in the table below.

Aspect	Potential Impact	Cumulative impact significance of the impact	
		Unmitigated	Mitigated
Geology	Loss and sterilisation of mineral resources	INSIGNIFICANT	
Topography	Altering topography	INSIGNIFICANT	
	Hazardous excavations and infrastructure resulting in safety risks to third parties and animals	Medium	VERY LOW
Soil and land capability	Loss of soil resources and land capability through physical disturbance and contamination	INSIGNIFICANT	
Biodiversity	Physical destruction and disturbance of floral species	Low	VERY LOW
	Physical destruction and disturbance of faunal species	Low	VERY LOW
Surface water resources	Alteration of natural drainage patterns	INSIGNIFICANT	
	Contamination of surface water resources	INSIGNIFICANT	
Groundwater	Contamination of groundwater resources	INSIGNIFICANT	
Air quality	Air pollution	INSIGNIFICANT	
Noise	Increase in disturbing noise levels	INSIGNIFICANT	
Visual	Negative visual views	INSIGNIFICANT	
Traffic	Road disturbance and traffic safety	INSIGNIFICANT	
Cultural/heritage and palaeontological resources	Loss of cultural/heritage and palaeontological resources	INSIGNIFICANT	
Socio-economic	Inward migration and economic impact	INSIGNIFICANT	
	Change in land use	INSIGNIFICANT	

ENVIRONMENTAL STATEMENT

The assessment of the proposed project presents the potential for negative impacts to occur (in the unmitigated scenario in particular) on the biophysical, cultural/heritage and socio-economic environments, both on the project footprint and in the surrounding area. With the implementation of management actions, these potential impacts can be prevented or reduced to acceptable levels. It follows that provided the EMP is effectively implemented, there is no reason from a biophysical, cultural/heritage or socio-economic standpoint why the proposed project should not proceed.

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ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
AEL	Atmospheric Emissions Licence
<u>APM</u>	<u>Archaeology, Palaeontology and Meteorites</u>
AQSR	Air Quality Sensitive Receptors
BA	Basic Assessment
BAR	Basic Assessment Report
<u>BGG</u>	<u>Burial Grounds and Graves</u>
BIC	Bushveld Igneous Complex
BID	Background Information Document
BMR	Base Metals Refinery
BoQ	Bill of Quantities
BPDM	Bojanala Platinum District Municipality
DEA	Department of Environmental Affairs
DEDECT	North West Department of Economic Development, Environment and Nature Conservation
DFFE	Department of Forestry, Fisheries and Environment
DMR	Department of Mineral Resources
DMRE	Department of Mineral Resources and Energy
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
E-Tek	E-Tek Consulting (Pty) Ltd
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECO	Environmental Control Officer
EO	Environmental Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
GN	Government Notice
GNR	Government Notice Regulation
Grevix	Grevix Services and Solutions
H&S	Health and Safety
ha	Hectares
HIA	Heritage Impact Assessment

Acronym / Abbreviation	Definition
I&APs	Interested and Affected Parties
IAIAsa	International Association for Impact Assessment South Africa
IBA	Important Bird Area
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
Impala	Impala Platinum Limited
<u>KBF</u>	<u>Kanana Business Forum</u>
m	Meter
mamsl	Metres Above Mean Sea Level
MAR	Mean Annual Run-Off
mbgl	Metres Below Ground Level
MCLEF	Mine Community Leadership and Engagement Forum
MPRDA	Mineral and Petroleum Resources Development Act, 28 of 2002
MR	Mining Right
NBA	National Biodiversity Assessment
NDCR	National Dust Control Regulations
NDP	National Development Plan
NEM: AQA	National Environmental Management: Air Quality Act, 39 of 2004
NEM: BA	National Environmental Management: Biodiversity Act, 10 of 2004
NEM: WA	National Environmental Management: Waste Act, 59 of 2008
NEMA	National Environmental Management Act, 107 of 1998
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act, 25 of 1999
NPAES	National Protected Areas Expansion Strategy
NTS	Non-Technical Summary
P&G's	Preliminary and Generals
PGM	Platinum Group Metals
PPP	Public Participation Process
PSDF	Provincial Spatial Development Framework
RBA/RBN	Royal Bafokeng Administration/Royal Bafokeng Nation
RDL	Red-Data List
RLM	Rustenburg Local Municipality
RLS	Rustenburg Layered Suite
RQIS	Research Quality Information Services
SACAD	South African Conservation Areas Database
SACNASP	South African Council for Natural Scientific Professions

Acronym / Abbreviation	Definition
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SAPS	South African Police Service
SAPAD	South African Protected Area Database
SAS	Scientific Aquatic Services cc
SCC	Species of Conservation Concern
SHE	Safety, Health and Environment
SLP	Social and Labour Plan
SLR	SLR Consulting (Africa) (Pty) Ltd
SSVR	Site Sensitivity Verification Report
StatsSA	Statistics South Africa
STS	Scientific Terrestrial Services cc
TNCO	Transvaal Nature Conservation Ordinance, 12 of 1983
TOPS	Threatened or Protected Species
UCVB	Unchanneled Valley Bottom
UK	United Kingdom
WMA	Water Management Area
WRD	Waste Rock Dump
WUL	Water Use Licence

Proposed Expansion of the Parking Area at the Shaft 16 Complex, Impala Platinum Mine, Rustenburg Operation - Basic Assessment Report

INTRODUCTION

This chapter provides a brief description of the proposed project background, describes the purpose of the report, summarises the legislative authorisation requirements and outlines the opportunity for stakeholders to comment.

PROJECT BACKGROUND

Impala Platinum Limited (Impala), a member of the Implats group of companies, operates a platinum group metals (PGM) mining and processing operation located approximately 16 km north-north-west of the town of Rustenburg, in the Rustenburg Local Municipality (RLM) and the Bojanala Platinum District Municipality (BPDm), North West province. Regional and local setting maps are provided in Figure 1-1 and Figure 1-2, respectively.

Impala holds and operates in accordance with the following authorisations (attached as Appendix A):

- An amended Mining Right (MR) issued in terms of the Mineral and Petroleum Resources Development Act, 28 of 2002 (MPRDA) (Department of Mineral Resources and Energy (DMRE) (previously the Department of Mineral Resources (DMR)) Ref: NW-00194-MR/102) issued on 13 December 2018; and
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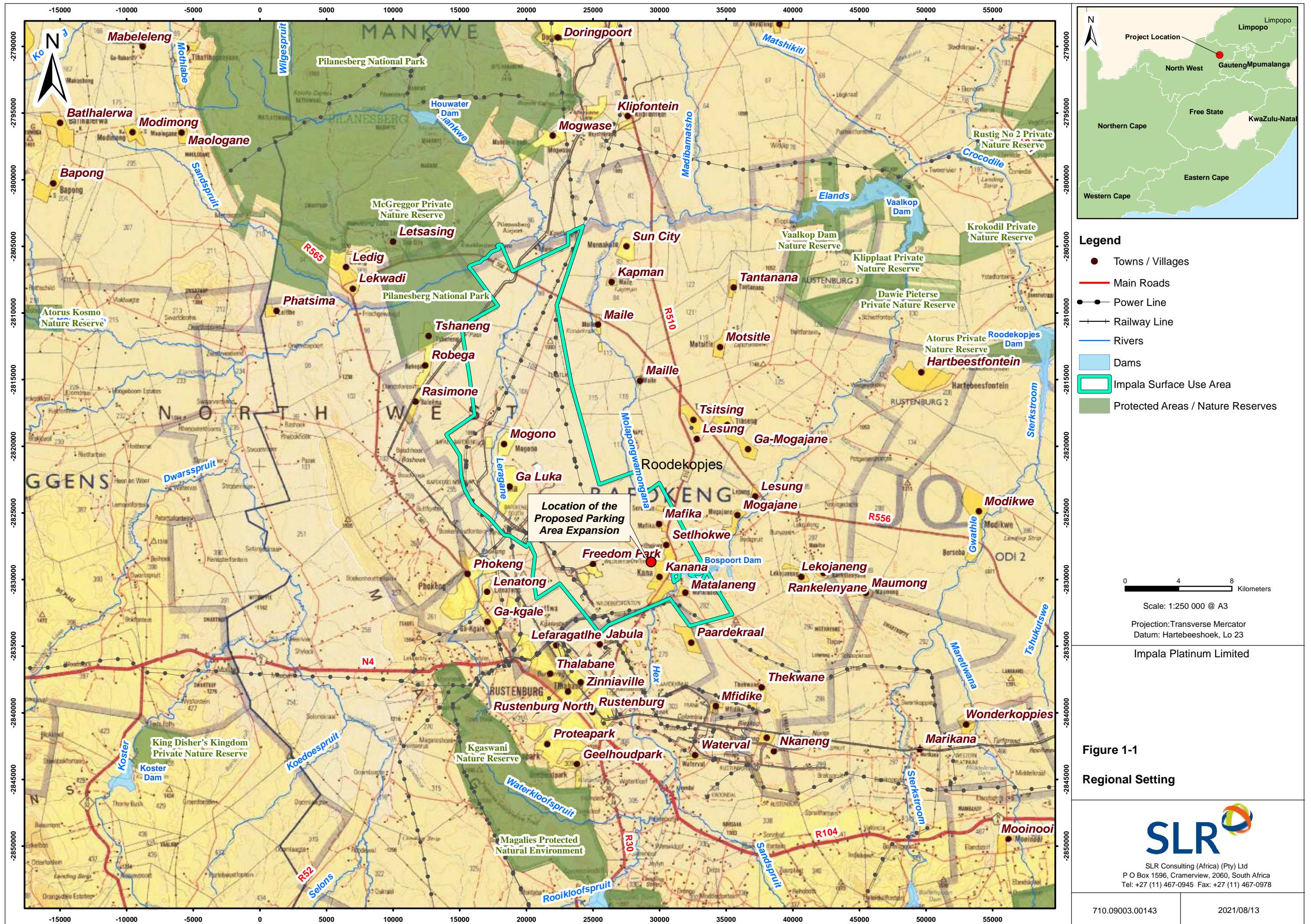
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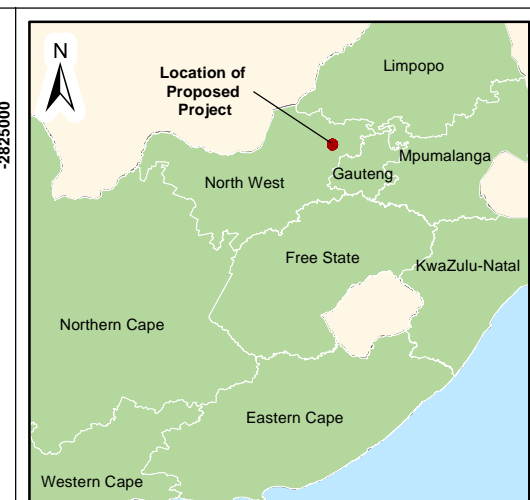
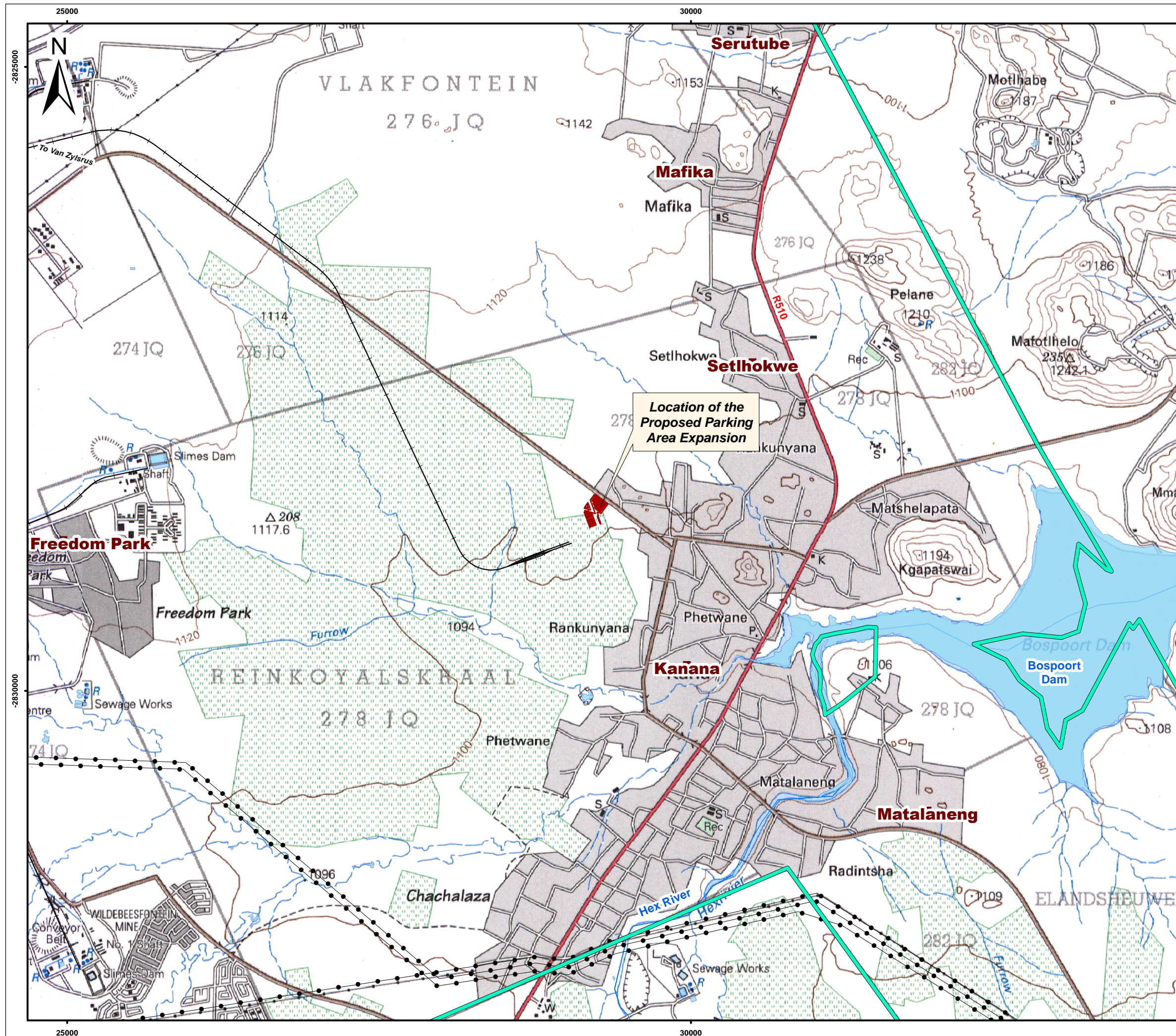
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Prior to the commencement of the proposed project, the following is required:

- An amended EMPr in terms of Section 102 the MPRDA from the DMRE; and
- An Environmental Authorisation (EA) in terms of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) promulgated under the National Environmental Management Act, 107 of 1998 (NEMA) from the DMRE.

SLR Consulting (Africa) (Pty) Ltd (SLR), an independent firm of Environmental Assessment Practitioners (EAPs), has been appointed by Impala to manage the amended EMPr and EA processes.





- Legend**
- Towns / Villages
 - Main Roads
 - Power Line
 - Railway Line
 - Rivers
 - Dams
 - Impala Surface Use Area
 - Proposed Parking Area Expansion

0 0.5 1 Kilometers

Scale: 1:30 000 @ A3

Projection: Transverse Mercator
Datum: Hartbeeshoek, Lo 27

Impala Platinum Limited

Figure 1-2

Local Setting



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PURPOSE OF THIS REPORT

This Basic Assessment Report (BAR) is compiled in accordance with Appendix 1 of the EIA Regulations, 2014 (as amended) and was distributed for review and comment as part of a Basic Assessment (BA) process undertaken for the proposed project.

This BAR provides a description of the proposed project and the affected environment, summarises the BA process undertaken to date, identifies and assesses the key impacts resulting from the proposed project and presents management and mitigation measures that are recommended to enhance benefits and limit negative impacts. The specialist findings and other relevant information are integrated into this BAR, which includes an EMPr.

The purpose of the report is to present the afore-mentioned information in a clear and understandable format suitable for easy interpretation by Interested and Affected Parties (I&APs) and provided an opportunity for I&APs to comment on all aspects of the proposed project, as well as findings of the impact assessment. All comments received during the comment period have been included in this revised BAR, which has been submitted to the DMRE for consideration and decision-making. It should be noted that all significant changes to the BAR are underlined and in a different font (Times New Roman) to the rest of the text, for ease of reference and understanding.

Furthermore, the proposed project requires an amendment to the existing EMPr in terms of the MPRDA: *“A reconnaissance permission, prospecting right, mining right, mining permit, retention permit, technical corporation permit, reconnaissance permit, exploration right, production right, prospecting work programme, exploration work programme, production work programme, mining work programme environmental management programme or an environmental authorisation issued in terms of the National Environmental Management Act, 1998, as the case may be, may not be amended or varied (including by extension of the area covered by it or by the additional of minerals or a shares or seams, mineralised bodies or strata, which are not at the time the subject thereof) without the written consent of the Minister.”*

In this regard, this BAR aims to address the requirements of both the MPRDA Section 102, as well as NEMA requirements to facilitate informed decision-making by the competent authority. Due to the localised nature of the activity, a stand-alone EMPr has been compiled for ease of management of this activity. The stand-alone EMPr will be appended to the broader mining EMPr.

TERMS OF REFERENCE

The terms of reference for these amended EMPr and EA processes are to:

- Apply for an EA for the Listed Activities triggered by the proposed project in terms of the EIA Regulations, 2014 (as amended) promulgated under NEMA;
- Submit a Section 102 application to amend the consolidated EMPr in terms of the MPRDA;
- Ensure that a BA process for the proposed project is undertaken in an open, participatory manner that ensures all potential issues of concern and their associated impacts are identified;
- Undertake a formal public participation process (PPP), which includes the distribution of information to I&APs and provide an opportunity for I&APs to raise any issues/concerns arising

from the proposed project, as well as an opportunity to comment on all documentation arising from the BA process; and

- Integrate all information into a BAR to allow for an informed decision to be taken on the proposed project by the relevant authorities.

OBJECTIVES OF THE BASIC ASSESSMENT PROCESS

In accordance with Appendix 1 of the EIA Regulations, 2014 (as amended), the objectives of the BA process are to:

- Identify the policies and legislation relevant to the activity and determine how the activity complies and responds to the policy and legislative context;
- Present the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- Identify and confirm the preferred activity, technology and sites related to the proposed project;
- Undertake an impact assessment, inclusive of cumulative impacts, to determine the biophysical, cultural/heritage and socio-economic sensitivity of the project sites and assess the nature, significance, consequence, extent, duration and probability of the impacts occurring;
- Assess the degree to which impacts can be reversed, may cause irreplaceable loss of resources and can be avoided, managed or mitigated; and
- Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

OPPORTUNITY FOR COMMENT

The BAR was distributed for a 30-day comment period from 8 September to 8 October 2021 in order to provide I&APS with an opportunity to comment on any aspect of the BA process and the proposed project. An extension to the comment period was also granted until 27 October 2021. Copies of the full report were made available on the SLR website (www.slrconsulting.com) and the SLR data-free website (<https://slrpublicdocs.datafree.co/public-documents>). As mentioned previously, all comments received during the comment period have been included in this revised BAR, which has been submitted to the DMRE for consideration and decision-making. It should be noted that all significant changes to the BAR are underlined and in a different font (Times New Roman) to the rest of the text, for ease of reference and understanding.

PART A – SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

This chapter provides the details, qualifications and experience of the EAPs undertaking the BA process for the proposed project.

1.1 DETAILS OF THE PROJECT TEAM

SLR, an independent firm of EAPs, has been appointed by Impala to manage the amended EMPr and EA processes. The details of the project team that were involved in the preparation of this BAR are provided in Table 1-1.

SLR has no vested interest in the proposed project other than fair payment for consulting services rendered as part of the amended EMPr and EA processes and has declared its independence, as required by the EIA Regulations, 2014 (as amended), in chapter 17.

Table 1-1: Details of the EAP

General		
Organisation	SLR Consulting (Africa) (Pty) Ltd	
Postal Address	PO Box 1596, Cramerview, 2060	
Tel	011 467 0945	
Fax	011 467 0978	
Name	Task and role	Email
Ed Perry	Project Reviewer - Document and process review, quality control	eperry@slrconsulting.com
Sharon Meyer	Project Director – EAP	smeyer@slrconsulting.com
Rizqah Baker	Project Manager – Management of BA process, report compilation	rbaker@slrconsulting.com

1.2 EXPERTISE OF THE EAP

Ed Perry has worked in environmental consultancy for over twenty years for a wide range of public and private sector clients. Ed is a registered Environmental Auditor with the Institute for Environmental Management and Assessment and a Lead Auditor with the International Cyanide Management Institute. Prior to moving to South Africa in 2011, Ed worked in the United Kingdom (UK) on a wide range of projects, including EIAs and Integrated Pollution and Prevention Permits. This included permitting the first hazardous waste landfill in the UK under the new integrated permitting mechanism and undertaking a study for the European Commission on the implementation of the Landfill Directive in 15 European countries. Ed is a member of the International Association for Impact Assessment South Africa (IAIASa) and a Registered EAP with the Environmental Assessment Practitioners Association of South Africa (EAPASA).

Sharon Meyer has over 20 years of experience as an environmental scientist and project manager. She has managed complex projects within the mining and power generation sectors, with a focus on industrial waste management. She has managed multi-national and multi-disciplinary teams on authorisation processes and social due diligence mining projects in Africa. Sharon has worked on a variety of mining projects, including diamond, coal, gold, vanadium, and tailings reclamation projects. Sharon is registered as an EAP with EAPASA, is registered with the South African Council for Natural Scientific Professions (SACNASP) and is a member of IAIAAsa.

Rizqah Baker is a consultant with four years' experience working in the environmental field and has worked both in the public and private sectors. She worked for the City of Cape Town; her roles included environmental auditing and providing comment on various BARs, Method Statements, EMPs and development proposals. In the private sector she worked for an environmental rehabilitation firm, with a main role being report compilation and writing and has spent considerable time in the field, having undertaken alien vegetation control and search and rescue operations. As a consultant, she has worked in various sectors, including infrastructure, oil & gas, mining, and the built environment. She's also worked as an Environmental Control Officer (ECO) and thus brings with her a strong understanding of, and implementation of EMPs.

Curricula vitae and professional registrations of the project team are provided in Appendix B.

2. LOCATION OF ACTIVITY

This chapter provides details of the location of the proposed project.

2.1 LOCATION OF OVERALL ACTIVITY

Details of the property on which the proposed project is located is provided in Table 2-1.

Table 2-1: Property Description

Description	Detail
Farm name and portion	Portion 3 of the farm Reinkoyalskraal 278 JQ
Application area (hectares (ha))	The proposed project covers an area of approximately 2.5 ha
Magisterial District	Rustenburg Magisterial District
Distance and direction from nearest town	16 km north-north-west of the town of Rustenburg
21-digit surveyor general code	T0JQ00000000027800003

2.2 LOCALITY MAP

Regional and local setting maps are provided in Figure 1-1 and Figure 1-2, respectively.

3. DESCRIPTION OF THE SCOPE OF THE ACTIVITY

This chapter provides an overview of the existing operations, identifies the Listed Activities triggered by the proposed project and provides a description of the proposed project activities.

3.1 OVERVIEW OF EXISTING OPERATIONS

Impala's mining and mineral processing operation is located approximately 16 km north-north-west of the town of Rustenburg. In broad terms, the existing activities include underground mining and mineral processing. It should be noted that historic opencast mining operations have ceased, and the last pit was rehabilitated in December 2013. Further detail is provided in the following sections.

3.1.1 Underground Mining

Two separate reefs are mined as part of Impala's current underground mining operations, namely, the UG2 reef and the Merensky reef. Impala has several shafts mining these reserves, as outlined in Table 3-1.

Table 3-1: Impala's Shafts

Name	Detail and Description
1 Shaft	Operating shaft
2 and 2A Shaft	Mining completed ore reserves, no future mining is planned
4 Shaft	Mining completed ore reserves, no future mining is planned
5 Shaft	Mining completed ore reserves, no future mining is planned
6 Shaft	Operating shaft
7 and 7A Shaft	Mining completed ore reserves, no future mining is planned
8 Shaft	Mining completed ore reserves, no future mining is planned
9 Shaft	Mining completed ore reserves, no future mining is planned
10 Shaft	Operating shaft
11 Shaft	Operating shaft
12 Shaft	Operating shaft
12 North Shaft	Mining completed ore reserves, no future mining is planned
14 Shaft	Operating shaft
16 Shaft	Operating shaft (still ramping up to full production)
17 Shaft	Construction deferred/no mining is planned
20 Shaft	Operating shaft (still ramping up to full production)
EF Shaft	Operating shaft

Two types of mining methods are utilised by Impala as part of its current underground mining operations. These methods are summarised as follows:

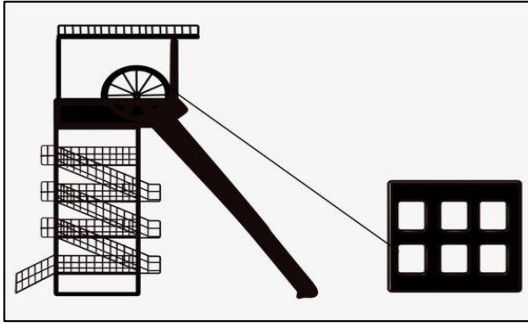
- **Conventional Mining:** This method entails the use of underground conventional stoping to conduct mining operations. Underground tunnels are drilled using handheld compressed air powered rockdrills, leaving behind an open space known as a stope. Subsequent holes drilled for rock extraction are filled with explosives and blasted at a set time. The blasted rocks are extracted, pulled to the main rock transfer system and then hoisted to surface. In underground conventional stoping, blasted rock is cleaned using electric-powered winches, which uses wire ropes to pull on scrapers to scrape the rock into an ore pass, which then gets loaded into the hoppers and transported to the shaft ore transfer system.
- **Mechanised Mining Operations (Trackless Mining):** This method entails the use of mobile equipment i.e., self-propelled machines. Underground tunnels are drilled using diesel-powered vehicles and large hydroelectric drills. Underground tunnels are then filled with explosives and blasted at a set time. In trackless mining, no vehicles which run on rails are used to move ore. The blasted rocks are transported to the mine's ore transfer system using underground dump trucks or conveyors.

3.1.2 Mineral Processing

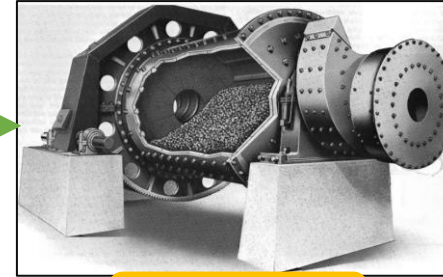
Ore from mining operations are treated at the mineral processing plant. Impala's mineral processing operation comprises two concentrators (Central Concentrator Plant and UG2 Plant), a smelter and two tailing storage facility complexes. The final converter matte produced in the smelter is refined at the Impala Refineries at Spring. An overview of the mineral processing operations is provided in Figure 3-1.

FIGURE 3-1: OVERVIEW OF MINERAL PROCESSING OPERATIONS

MINING OPERATIONS



ORE



MILL

CONCENTRATING

MILLED ORE



FLOTATION

CONCENTRATE

**TAILINGS TO
TAILINGS DAM**

SMELTING AND CONVERTING



CONVERTER MATTE

REFINING



3.1.3 Existing Parking Area at Impala's Shaft 16 Complex

Impala's Shaft 16 Complex is located on the farm Reinkoyalskraal 278 JQ and comprises of a vertical man/material and rock hoisting shaft, an upcast ventilation shaft, WRD, run of mine and stockpile areas, and various ancillary support services, including an office complex, stores and parking area. The current parking area is located within the boundary of the Shaft 16 Complex and consists of 919 covered parking bays. The existing parking area accommodates the current labour force at the Complex of 6 430 employees, making provision for 14% of the current labour force.

3.2 PROPOSED LISTED AND SPECIFIED ACTIVITIES

The EIA Regulations, 2014 (as amended) promulgated under NEMA and published in Government Notice (GN) No. R982 (as amended by GN No. 326 of 7 April 2017) controls certain Listed Activities. These activities are listed in GN No. R983 (Listing Notice 1; as amended by GN No. 327 of 7 April 2017), R 984 (Listing Notice 2; as amended by GN No. 325 of 7 April 2017) and R985 (Listing Notice 3; as amended by GN No. 324 of 7 April 2017) and are prohibited until EA has been obtained from the competent authority. Such EA, which may be granted subject to conditions, will only be considered once there has been compliance with GN No. R982 (as amended).

GN No. R 983 (as amended) sets out the procedures and documentation that need to be complied with when applying for EA. A BA process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notices 1 and/or 3 and an EIA process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notice 2.

The proposed project triggers Listing Activity 27 contained in Listing Notice 1 (see Table 3-2), thus a BA process must be undertaken in order for the DMRE to consider the application in terms of NEMA and make a decision as to whether to grant EA or not.

Table 3-2: Listing Activities Applicable to the Proposed Project

Description of the proposed project	Extent of the activity	Listed Notice, Listing Activity and Relevance
Proposed expansion of the parking area at the Impala's Shaft 16 Complex	Approximately 2.5 ha	<p>Listing Notice 1, GN No. R983, Listing Activity 27: <i>The clearance of an area of 1 ha or more, but less than 20 ha of indigenous vegetation, except where such clearance of indigenous vegetation is required for -</i></p> <p>(i) <i>the undertaking of a linear activity; or</i></p> <p>(ii) <i>maintenance purposes undertaken in accordance with a maintenance management plan.</i></p> <p>Relevance: The proposed expansion of the parking area will require the clearance of approximately 2.5 ha of indigenous vegetation.</p>

3.3 DESCRIPTION OF THE PROPOSED PROJECT

Impala is proposing to expand the existing parking area at the Shaft 16 Complex by 672 covered parking bays. The proposed project also includes a dedicated taxi pick-up, drop-off and waiting area. The proposed expansion will be undertaken within the boundary of Impala's MR and will cover an area of approximately 2.5 ha. The proposed project layout is provided in Figure 3-2.

The scope of work for the expansion of the parking area includes the following:

- Excavation and terracing for foundation in accordance with the approved civil/structural engineering drawings;
- Concrete works;
- Structural steelwork and roof sheeting; and
- Plumbing, electrical and external works including perimeter palisade fencing, storm water drainage, lighting masts, security and access control.

It is important to note that decommissioning and closure-related activities for the proposed project will form part of the existing approved activities for the Shaft 16 Complex.

An overview of the activities and infrastructure associated with the proposed project is provided in Table 3-3.

The duration of the construction phase of the proposed project is anticipated to be approximately 12 months. Due to the nature of the proposed project and the limited extent and duration, it is not anticipated to generate a significant number of job opportunities. In this regard, a staff complement of approximately 45 individuals would be required for the construction phase (skilled and unskilled job opportunities). Procurement opportunities would be sourced locally, as far as possible. Due to the nature of the proposed project, no job or procurement opportunities will be created post-construction.



0 30 60 Meters

Scale: 1:2 000 @ A3

Projection: Transverse Mercator
Datum: Hartbeeshoek, Lo 27

Impala Platinum Limited

Figure 3-2

Site Layout



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710.09003.00143

2021/08/13

Table 3-3: Overview of the Activities Associated with the Proposed Project

Main Activity	Sub-Activity	Applicable Phase
Site preparation	Establishment of contractor's site camp and laydown area	<ul style="list-style-type: none"> Construction
Earthworks	Vegetation clearing	<ul style="list-style-type: none"> Construction
	Topsoil removal	<ul style="list-style-type: none"> Construction
	Site excavation and terracing for foundations	<ul style="list-style-type: none"> Construction
Civil works	Mixing of concrete and concrete work (including storage and handling of fuel, lubricants, sand, rock, cement and chemical additives)	<ul style="list-style-type: none"> Construction
	Dust suppression	<ul style="list-style-type: none"> Construction
	Structural steelwork (including grinding and welding) and roof sheeting installation	<ul style="list-style-type: none"> Construction
	Plumbing, electrical and lighting works	<ul style="list-style-type: none"> Construction
	Fencing installation	<ul style="list-style-type: none"> Construction
	Stormwater drainage management	<ul style="list-style-type: none"> Construction
Transport system	The use of parking, loading and off-loading areas for truck, plant and other equipment	<ul style="list-style-type: none"> Construction Decommissioning
	Transportation of staff to and from site	<ul style="list-style-type: none"> Construction Operation Decommissioning
	Use of parking bays	<ul style="list-style-type: none"> Operation
General site management	Security and access control	<ul style="list-style-type: none"> Construction Operation
	Alien vegetation management	<ul style="list-style-type: none"> Construction Operation
	General monitoring, inspection and maintenance	<ul style="list-style-type: none"> Operation
	Dust suppression	<ul style="list-style-type: none"> Construction Operation
Demolition	Removal of contractor's site camp and laydown area	<ul style="list-style-type: none"> Construction
	Removal of infrastructure	<ul style="list-style-type: none"> Decommissioning
Rehabilitation	Replenishment of soil resources	<ul style="list-style-type: none"> Decommissioning
	Revegetation of disturbed areas	<ul style="list-style-type: none"> Decommissioning
	Slope stabilisation and erosion control	<ul style="list-style-type: none"> Decommissioning
	Alien vegetation management	<ul style="list-style-type: none"> Decommissioning
Maintenance and aftercare	Initiation of aftercare and maintenance programme	<ul style="list-style-type: none"> Closure
	Maintenance of post-closure landforms, facilities and rehabilitated areas	<ul style="list-style-type: none"> Closure

4. POLICY AND LEGISLATIVE CONTEXT

In accordance with the EIA Regulations, 2014 (as amended) and the DMRE BAR template, this chapter outlines the key legislative requirements applicable to the proposed project and outlines the guidelines, policies and plans that have been considered during the EA and EMPr amendment processes.

4.1 CONSIDERATION OF LEGISLATION

4.1.1 Mineral and Petroleum Resources Development Act, 28 of 2008

The MPRDA governs the acquisition, use and disposal of mineral and petroleum resources. The objectives of the Act, amongst others, are to promote economic growth and mineral and petroleum resources development in South Africa, particularly the development of downstream industries through the provision of feedstock and development of mining and petroleum inputs industries and also to promote employment and advance the social and economic welfare of all South Africans.

Chapter 4 of the Mineral and Environmental Regulation provides a framework for the application of mining, prospecting and closure rights. The DMRE must apply the range of environmental principles included in Section 2 of NEMA when taking decisions that significantly affect the environment. To give effect to the general objectives of Integrated Environmental Management (IEM), the potential impacts on the environment of listed or specified activities must be considered, investigated, assessed and reported on to the competent authority. Section 24(4) of NEMA provides the minimum requirements for procedures for the investigation, assessment, management, and communication of the potential impacts.

In addition, Section 102 of the MPRDA governs the amendment of rights, permits, programmes and plans.

The proposed project entails the expansion of the parking area at Impala's Shaft 16 Complex. The proposed project will be undertaken within the boundary of Impala's MR. The proposed project does not include the addition of any minerals not currently included in the MR, therefore, a separate EA under the MPRDA is not deemed applicable. However, an application, in terms of Section 102 of the MPRDA, to amend the approved consolidated EMPr must be submitted to the DMRE to take cognisance of the proposed project, the associated environmental impacts and the subsequent monitoring or mitigation measures.

4.1.2 National Environmental Management Act, 107 of 1998

The NEMA establishes principles and provides a regulatory framework for decision-making on matters affecting the environment. Section 2 of NEMA sets out a range of environmental principles that are to be applied by all organs of state when taking decisions that significantly affect the environment. Included amongst the key principles is that all development must be socially, economically and environmentally sustainable and that environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably. NEMA also provides for the participation of I&APs and stipulates that decisions must take into account the interests, needs and values of all I&APs.

Chapter 5 of NEMA outlines the general objectives and implementation of IEM, which provides a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals. Section 24 provides a framework for granting of EA. In order to give effect to the general objectives of IEM, the potential impacts on the environment of Listed Activities must be considered, investigated, assessed and reported on to the competent authority. Section 24(4) provides the minimum requirements for procedures for the investigation, assessment and communication of the potential impact of activities.

This EA process must be undertaken in consideration of the afore-mentioned principles. In line with sustainability principles, potential impacts arising from the proposed project must be identified and mitigation actions must be provided.

4.1.3 Environmental Impact Assessment Regulations, 2014 (as amended)

The EIA Regulations, 2014 (as amended), promulgated under NEMA provide for control over certain Listed Activities. These Listed Activities are detailed in Listing Notice 1, Listing Notice 2 and Listing Notice 3. The undertaking of activities specified in the Listing Notices is prohibited until EA has been obtained from the competent authority. Such EA, which may be granted subject to conditions, will only be considered once there has been compliance with the EIA Regulations, 2014 (as amended).

The EIA Regulations, 2014 (as amended), set out the procedures and documentation that need to be complied with when applying for EA. A BA process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notices 1 and/or 3 and a Scoping and EIA process must be applied to an application if the authorisation applied for is in respect of an activity or activities listed in Listing Notice 2.

Furthermore, Appendix 1, Appendix 4 and Appendix 6 of the EIA Regulations, 2014 (as amended), set out the outcomes and requirements of reporting when compiling a BAR, EMPr and specialist reports, respectively. Compliance with these appendices is required upon submission of a BAR, EMPr and specialist reports (supporting documentation for a BAR) for application for EA in terms of the EIA Regulations, 2014 (as amended).

The proposed project triggers activities in terms of Listing Notice 1 (Activity 27) (refer to Table 3-2), therefore application for EA through a BA process, requiring the compilation of a BAR and EMPr (with specialist reports as supporting documentation), must be submitted to the DMRE.

4.1.4 National Environmental Management: Air Quality Act, 39 of 2004

The NEM: AQA regulates all aspects of air quality, including prevention of pollution and environmental degradation; providing for national norms and standards regulating air quality monitoring, management and control; and licencing of activities that result in atmospheric emissions and have or may have a significant detrimental effect on the environment. The NEM: AQA has established a National Framework for Air Quality Management with various standards being implemented. Activities that require an Atmospheric Emissions Licence (AEL) are listed in GN No. 893 (22 November 2013), published in terms of Section 21(1)(b) of the NEM: AQA. In terms of Section 22 of NEM: AQA, no person may conduct a Listed Activity without an AEL. Furthermore, the National Dust Control Regulations (NDCR), published on 1 November 2013,

prescribes the general measures for the control of dust in all areas. The standard for the acceptable dust fall-out rate is set out in the NDCR for residential and non-residential areas.

The proposed project does not trigger any activities that require application for an AEL in terms of NEM: AQA. However, the proposed project would result in the clearance of vegetation and removal of topsoil during the construction phase and may lead to an increase in ambient atmospheric emissions from vehicle tailpipes during operation. In this regard, the potential impacts on air quality in terms of NEM: AQA and the NDCR must be assessed and monitoring and mitigation measures must be recommended.

4.1.5 National Environmental Management: Waste Act, 59 of 2008

The National Environmental Management: Waste Act, 59 of 2008 (NEM: WA) regulates all aspects of waste management and has an emphasis on waste avoidance and minimisation. NEM: WA creates a system for listing and licensing waste management activities. Listed waste management activities above certain thresholds are subject to a process of impact assessment and licensing. Activities listed in Category A require a BA process, while activities listed in Category B require a Scoping and EIA process.

The proposed project does not trigger any activities that require application for a Waste Management Licence in terms of NEM: WA. However, minimal volumes of construction waste may be generated during the construction phase of the proposed project. In this regard, monitoring and management measures of waste in terms of NEM: WA must be recommended.

4.1.6 National Environmental Management: Biodiversity Act, 10 of 2004

The National Environmental Management: Biodiversity Act, No. 10 of 2004 (NEM: BA) provides for the management and conservation of South Africa's biodiversity within the framework of NEMA and provides for the following:

- The protection of species and ecosystems that warrant national protection;
- The sustainable use of indigenous biological resources;
- The fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; and
- The establishment and functions of a South African National Biodiversity Institute (SANBI) and for matters connected therewith.

The proposed project entails the clearance of approximately 2.5 ha of indigenous vegetation in order to make provision for the expansion of the parking area at the Shaft 16 Complex. In this regard, the potential impact on biodiversity must be considered as part of the EA process. Moreover, cognisance of protected species in terms of NEM: BA must be made, in the event that these species are identified within the project footprint.

4.1.7 National Heritage Resources Act, 25 of 1999

The National Heritage Resources Act, 25 of 1999 (NHRA) provides for the identification, assessment and management of the heritage resources of South Africa. The Act lists development activities that would require authorisation by the responsible heritage resources authority. The Act requires that a person who intends to undertake a listed activity notify the relevant provincial heritage authority at the earliest stages

of initiating such a development. The relevant provincial heritage authority would then, in turn, notify the person whether a Heritage Impact Assessment (HIA) should be submitted. However, according to Section 38(8) of the NHRA, a separate report would not be necessary if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act (No. 73 of 1989) (now replaced by NEMA) or any other applicable legislation. The decision-making authority should; however, ensure that the heritage evaluation fulfils the requirements of the NHRA and consider in its decision-making any comments and recommendations made by the relevant heritage resources authority.

In terms of Section 38(1)(c)(i) of the NHRA, any development or activity exceeding 5 000 m² in extent would require that notification of the proposed development be made to the responsible heritage authority. Furthermore, details pertaining to the location, nature and extent of the proposed development are also required to be submitted to the responsible heritage authority.

The proposed project entails the expansion of the parking area at the Shaft 16 Complex, measuring at approximately 2.5 ha i.e., exceeding 5 000 m² in extent. In this regard, the provisions of NHRA must be followed and notification and other relevant information must be submitted to the South African Heritage Resources Agency (SAHRA).

4.2 CONSIDERATION OF GUIDELINES, POLICIES, PLANS AND FRAMEWORKS

The guidelines, policies, plans and frameworks that have been considered during the EMPr amendment and EA processes are provided in Table 4-1.

Table 4-1: Guidelines, Policies, Plans and Frameworks Applicable to the Proposed Project

Document	Governing Body	Relevance
Covid-19 Directions	Department of Social Development	These Directions informed the form and levels of public participation possible within the restrictions related to the National State of Disaster.
Public Participation Guideline in terms of NEMA (2017)	Department of Forestry, Fisheries and Environment (DFFE)	These guidelines were consulted to ensure that an adequate PPP was undertaken during the EMPr amendment and EA process.
Guideline for consultation with communities and I&APs (2014)	DMRE	
IEM Guideline Series Guideline 7: Public participation in the EIA process (2012)	DFFE	
Guideline on need and desirability in terms of the EIA Regulations (2017)	DFFE	These documents informed the consideration of the need and desirability aspects of the proposed project.
Guideline on need and desirability in terms of the EIA Regulations (2014)	DFFE	

Document	Governing Body	Relevance
National Development Plan (NDP), 2030	National Planning Commission	
New Growth Path, 2011	Department of Economic Development	
RLM Integrated Development Plan (IDP), 2020-2021	RLM	
BPDM IDP, 2019-2020	BPDM	
North West Provincial Spatial Development Framework (PSDF), 2016	Office of the Premier of the North West	
Cumulative Effects Assessment, IEM, Information Series 7 (2004)	DFFE	This guideline was consulted to inform the consideration of potential cumulative effects of the proposed project.
Criteria for determining Alternatives in EIA, IEM, Information Series 11 (2004)	DFFE	This guideline was consulted to inform the consideration of alternatives.
Environmental Management Plans (EMP), IEM, Information Series 12 (2004)	DFFE	This guideline was consulted to ensure that the EMPr has been adequately compiled.
Environmental Impact Reporting, IEM, Information Series 15 (2004)	DFFE	This guideline was consulted to inform the approach to impact reporting.
Specialist Studies, IEM, Information Series 4 (2002)	DFFE	This guideline was consulted to ensure adequate development of terms of reference for specialist studies.
Impact significance, IEM, Information Series 5 (2002)	DFFE	This guideline was consulted to inform the assessment of the significance of impacts of the proposed project.

4.3 LEGISLATIVE BAR CONTENT REQUIREMENTS

This BAR has been prepared in accordance with the DMRE BAR template format and Appendix 1 and Appendix 4 of EIA Regulations, 2014 (as amended), the contents of which are outlined in Table 4-2 and Table 4-3, respectively.

Table 4-2: Requirements of a BAR in terms of Part A of the DMRE template and Appendix 1 of the EIA Regulations

BAR requirements as per the DMRE template	BAR requirements as per the EIA Regulations, 2014 (as amended)	Reference in the report
Part A of the DMRE template	Appendix 1 of the EIA Regulations, 2014 (as amended)	
Details of the EAP.	Details of the EAP who prepared the report.	Chapter 1
Expertise of the EAP.	Details of the expertise of the EAP, including curriculum vitae.	Chapter 1 and Appendix A

BAR requirements as per the DMRE template	BAR requirements as per the EIA Regulations, 2014 (as amended)	Reference in the report
Location of overall activity.	The location of the activity, including - the 21-digit Surveyor General code of each cadastral land parcel. Where available the physical address and farm name. Where the required information is not available, the coordinates of the boundary of the property or properties.	Chapter 2
Locality plan.	A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken or on land where the property has not been defined, the coordinates within which the activity is to be undertaken.	Figure 1-1, Figure 1-2 and Figure 3-2
Description of the scope of the proposed overall activity.	A description of the scope of the proposed activity, including all listed and specified activities triggered. A description of the activities to be undertaken, including associated structure and infrastructure.	Chapter 3
Policy and legislative context.	A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context.	Chapter 4
Need and desirability of the proposed activity.	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.	Chapter 5
Motivation for the overall preferred site, activities and technology alternative.	A motivation of the preferred development footprint within the approved site including.	Chapter 6
A full description of the process followed to reach the proposed development footprint within the site.	A full description of the process followed to reach the proposed development footprint within the approved site.	Chapter 7
Details of the development footprint alternatives considered.	Details of all the alternatives considered.	Chapter 6
Details of the PPP followed.	Details of the PPP undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs.	Chapter 7
Summary of issues raised by I&APs.	A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them.	Chapter 7
Environmental attributes associated with the alternatives.	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.	Chapter 7
Impacts and risks identified including the nature, significance, consequence, extent, duration and probability	The impacts and risks identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can	Appendix D

BAR requirements as per the DMRE template	BAR requirements as per the EIA Regulations, 2014 (as amended)	Reference in the report
of the impacts including the degree of the impacts.	be reversed, may cause irreplaceable loss of resources and can be avoided, managed and mitigated.	
Methodology used in determining the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks.	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks.	Section 7.6
The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternative will have on the environment and the community that may be affected.	Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.	Appendix D
The possible management actions that could be applied and the level of risk.	The possible management actions that could be applied and level of residual risk.	Chapter 26
Motivation where no alternative sites were considered.	The outcome of the site selection matrix. If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such.	Chapter 6
Statement motivating the alternative development location within the overall site.	A concluding statement indicating the preferred alternatives, including preferred location within the approved site.	Chapter 7
Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout) through the life of the activity.	A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structure and infrastructure will impose on the preferred location through the life of the activity including a description of all environmental issues and risks that were identified during the environmental impact assessment process and an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of management actions.	Chapter 8
Assessment of each identified potentially significant impact and risk.	An assessment of each identified potentially significant impact and risk including cumulative impacts, the nature, significant and consequence of the impact and risk, the extent and duration of the impact and risk, the probability of the impact and risk occurring, the degree to which the impact can be reversed, the degree to which the impact and risk may cause irreplaceable loss of a resources and the degree to which the impact and risk can be mitigated.	Chapter 9
Summary of specialist reports.	Where applicable the summary of the findings and recommendations of any specialist report complying with Appendix 6 of these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report.	Chapter 10

BAR requirements as per the DMRE template	BAR requirements as per the EIA Regulations, 2014 (as amended)	Reference in the report
Environmental impact statement.	An environmental impact statement which contains a summary of the key findings of the environmental impact assessment, a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers and a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.	Chapter 11
Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr.	Based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr.	Chapter 12
Aspects for inclusion as conditions of authorisation.	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation.	Chapter 13
Description of any assumptions, uncertainties and gaps in knowledge.	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and management actions proposed.	Chapter 14
Reasoned opinion as to whether the proposed activity should or should not be authorised.	Reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation.	Chapter 15
Period for which environmental authorisation is required.	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded, and the post construction monitoring requirements finalised.	Chapter 16
Undertaking.	An undertaking under oath or affirmation by the EAP in relation to the correctness of the information provided in the reports, the inclusion of comments and inputs from stakeholders and I&APs, the inclusion of inputs and recommendations from the specialist reports where relevant and any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties.	Chapter 17
Financial provision.	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts.	Chapter 27
Specific information required by the competent authority.	Any specific information required by the competent authority.	Chapter 30
Other matter required in terms of section 24(4)(a) and (b) of the Act.	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	N/A

Table 4-3: Requirements of a BAR in terms of Part A of the DMRE template and Appendix 4 of the EIA Regulations

BAR requirements as per the DMRE template	EMPr requirements per the EIA Regulations, 2014 (as amended)	Reference in the report
Part B of the DMRE template	Appendix 4 of the EIA Regulations, 2014 (as amended)	
Details of EAP.	Details of the EAP who prepared the EMPr and the expertise of that EAP to prepare the EMPr, including curriculum vitae.	Chapter 1
Description of the aspects of the activity.	A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.	Chapter 3
Composite map.	A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers.	Figure 1-2 and Figure 3-2
Description of impact management objectives including management statements.	A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including planning and design, pre-construction activities, construction activities, rehabilitation of the environment after construction and where applicable post closure; and where relevant, operation activities.	Appendix D
Impacts to be mitigated in their respective phases.	-	Appendix D
Impact management outcomes.	A description and identification of impact management outcomes required for the aspects contemplated in paragraph.	Chapter 25
Impact management actions.	A description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes be achieved, and must, where applicable, include actions to avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; comply with any prescribed environmental management standards or practices; comply with any applicable provisions of the Act regarding closure, where applicable comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable.	Chapter 26
Financial provision.	-	Chapter 27
Mechanism for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.	The method of monitoring the implementation of the impact management actions.	Chapter 28
-	The frequency of monitoring the implementation of the impact management actions.	Chapter 28

BAR requirements as per the DMRE template	EMPr requirements per the EIA Regulations, 2014 (as amended)	Reference in the report
-	An indication of the persons who will be responsible for the implementation of the impact management actions.	
-	The time periods within which the impact management actions must be implemented.	
-	The mechanism for monitoring compliance with the impact management actions.	
-	A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations.	
Environmental Awareness Plan.	An environmental awareness plan describing the manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work; and risks must be dealt with in order to avoid pollution or the degradation of the environment.	Chapter 29
Specific information required by the competent authority.	Any specific information that may be required by the competent authority.	Chapter 30
Undertaking.	-	Chapter 31

5. NEED AND DESIRABILITY OF THE PROPOSED PROJECT

This chapter aims to provide an overview of the need and desirability of the proposed project with the strategic context of national development policy planning, broader societal needs and regional and local planning, as well as the NEMA principles of sustainable development.

5.1 BACKGROUND

The DFFE's (previously the Department of Environmental Affairs (DEA)) guideline on need and desirability (2017) notes that while addressing the growth of the national economy through the implementation of various national policies and strategies, it is also essential that these policies take cognisance of strategic concerns, such as climate change, food security, the sustainability in supply of natural resources and the status of our ecosystem services. Thus, the over-arching framework for considering the need and desirability of development in general is taken at the policy level through the identification and promotion of activities/industries/developments required by civil society as a whole. The DFFE guideline further notes that at a project level (as part of an impact assessment process), the need and desirability of the project should take into consideration the content of regional and local plans, frameworks and strategies.

In light of the above, and in alignment with the above-mentioned guideline (DFFE, 2017), this section aims to provide an overview of the need and desirability for the proposed project by highlighting how it is aligned with the strategic context of national, regional and local development policy and planning, as well as with the goals of sustainable development as outlined in NEMA.

5.2 RATIONALE FOR THE PROPOSED PROJECT

The current build-up to steady state at Impala's Shaft 16 Complex entails the growth of the labour force from 6 430 to 6 930 staff. In this regard, and as part of its on-going mine planning, Impala has identified the need for additional parking bays on site to accommodate the increasing number of employees coming to the Shaft 16 Complex with their own vehicles. In addition, the proposed expansion of the parking area aims to improve health, safety and security for Impala's employees, through the provision of safe, secure and covered parking bays.

5.3 ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES

The proposed project footprint is located within the Savannah Biome, the Central Bushveld Bioregion and the Marikana Thornveld vegetation type. Historical imagery indicates that the entire project footprint has been cultivated and is thus considered to be significantly transformed, which has resulted in a significant alteration in vegetation structure, floral species composition and the ability of the habitat to support a high diversity of faunal species. In this regard, the habitat units identified on site can be more accurately described as follows:

- **Transformed Area:** A small section of the project footprint includes current built-up or transformed habitat associated with the main road leading to the Shaft 16 Complex, as well as heavily modified land where little to no indigenous vegetation remains; and
- **Secondary Marikana Thornveld Habitat Unit:** This habitat unit includes areas that are currently vegetated and that comprises indigenous vegetation; however, due to significant historic

transformation of this area, with no rehabilitation efforts, the vegetation is homogenous and species diversity poor from both a faunal and floral perspective.

The proposed project has the potential to directly disturb fauna and flora, with specific reference to vegetation clearing within the development footprint. Furthermore, soil is considered to be a valuable resource that supports a variety of ecological functions, and the proposed project has the potential to damage soil resources through physical disturbance, which has a direct impact on the potential loss of the natural capability of the land. As part of the EA process, an independent biodiversity specialist was appointed to determine the sensitivity of the project footprint. Measures that were considered to avoid the destruction and disturbance of biodiversity resources include limiting the extent of the development footprint. Where sensitivities could not be avoided, management actions focussed on ensuring ecological sustainability through appropriate rehabilitation measures. These management measures have been included in the EMPr, where appropriate.

5.4 PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT

5.4.1 National Policy and Planning Framework

5.4.1.1 National Development Plan, 2030

The NDP, 2030 provides the context for all growth in South Africa, with the overarching aim of eradicating poverty and inequality between people in South Africa through the promotion of development. The NDP, 2030 provides a broad strategic framework, setting out an overarching approach to confronting poverty and inequality based on the six focused and interlinked priorities. One of the key priorities is “faster and more inclusive economic growth”.

In order to transform the economy and create sustainable expansion for job creation, an average economic growth exceeding 5% per annum is required. One of the approaches to achieve this includes increasing exports by focusing on areas where South Africa already has natural endowments and comparative advantage, such as mining.

Notwithstanding the above, it is also acknowledged that environmental challenges are in conflict with some of these development initiatives. As such, it is emphasised that there is also a need to:

- Protect the natural environment;
- Enhance the resilience of people and the economy to climate change;
- Reduce carbon emissions in line with international commitments;
- Make significant strides toward becoming a zero-waste economy; and
- Reduce greenhouse gas emissions and improve energy efficiency.

The NDP, 2030 identifies the “minerals and metals cluster” (which encompasses all mining and quarrying activities, supplier industries to the mining sector, and downstream beneficiation of mined minerals) as a sector with substantial potential for growth stimulation and/or employment. It is pointed out that South Africa must exploit its mineral resources to create employment and generate foreign exchange and tax revenue.

The proposed project does not relate directly to the exploitation of mineral resources; however, the proposed expansion of the parking area is considered an ancillary activity associated with the current mining operations at the Shaft 16 Complex. In this regard, as part of on-going mine planning, the need for additional parking bays was identified, and will improve health, safety and security for the employees currently employed at the Shaft 16 Complex.

5.4.1.2 New Growth Path, 2011

The New Growth Path, 2011 reflects the commitment of government to prioritise employment creation in all economic policies and sets out the key drivers and sectors for employment which will be the focus of government. The sectors identified for prioritisation include infrastructure, agriculture, mining, manufacturing, tourism and the green economy.

In this regard, a staff complement of approximately 45 individuals would be required for the construction phase (skilled and unskilled job opportunities) of the proposed project. Procurement opportunities would be sourced locally, as far as possible.

5.4.2 Regional and Local Policy and Planning Framework

5.4.2.1 North West Provincial Spatial Development Framework, 2016

The North West PSDF, 2016 sets out the key spatial challenges faced by the province and the proposed spatial policies, which have been formulated to address these challenges. As such, it supports the spatial development vision to achieve the North West Development Plan, 2030.

Five strategic objectives have been identified to provide foundation for spatial development strategies in the North West. These objectives are outlined below:

- **Strategic Objective 1:** Focus development on regional spatial development initiatives, development corridors, development zones and nodes;
- **Strategic Objective 2:** Protect biodiversity, water and agricultural resources;
- **Strategic Objective 3:** Promote infrastructure investment;
- **Strategic Objective 4:** Support economic development and job creation guiding the spatial development pattern of the North West; and
- **Strategic Objective 5:** Balance urbanisation and the development of rural areas within the North West.

To achieve the high growth scenarios and strategic objectives above, seven development mechanisms were identified. These include land use planning and management; settlement planning; economic development; infrastructure investment; human resources development; facilitative governance; and industrialisation. These mechanisms will ensure that the province enjoys high growth by shifting from social needs-based policy to infrastructure and economic growth-based policies.

The proposed project entails the expansion of the parking area at the Shaft 16 Complex and is considered to relate to the afore-mentioned Strategic Objectives 3 and 4. This is because the proposed project relates to the investment in infrastructure development and will support economic development through the provision of job and procurement opportunities within the region during the construction phase.

5.4.2.2 Bojanala Platinum District Municipality Integrated Development Plan, 2019-2020

The BPDM IDP, 2019-2020 is the principle strategic instrument guiding all planning, management, investment and development within the district in order to provide the best solutions towards sustainable development. The vision of the BPDM IDP, 2019-2020 is to provide a model of cooperative governance for effective and efficient service delivery in partnership with local municipality and all stakeholders. In order to do so, the following priority issues and challenges within the district have been identified:

1. Water and sanitation;
2. Roads and storm water;
3. Electricity;
4. Land and housing;
5. Economic development;
6. Institutional development;
7. Municipality health; and
8. Social services.

The proposed project is considered to relate to the afore-mentioned priority issue 5. This is because the proposed project will support economic development through the provision of job and procurement opportunities within the region during the construction phase.

5.4.2.3 Rustenburg Local Municipality Integrated Development Plan, 2020-2021

The RLM IDP, 2020-2021 is the principle strategic instrument guiding all planning, management, investment and development within the local municipality in order to identify the best resolutions towards sustainable development. The RLM IDP, 2020-2021 identifies strategic focus areas recognised as the cornerstones of a successful and thriving council within the developed Master Plan 2040, and which form the foundation of its five-year IDP. The approved master plan has five goals which reads as follows:

- City of vibrant and diversified economy;
- City of identity;
- City of smart liveable homes;
- City of excellence in education and sport; and
- City of sustainable resources management

The IDP identifies agriculture, mining, manufacturing, utilities, trade, transport, finance, community and personal services, general government services and tourism as sectors that contributes to local economic development. In this regard, the proposed project will contribute to local economic development through the provision of job and procurement opportunities during the construction phase.

5.5 CONSISTENCY WITH NEMA PRINCIPLES

When considering an application for EA, the competent authority must comply with Section 24O of NEMA and must have regard for any guideline published in terms of Section 24J of the Act and any minimum requirements for the application. This includes the DFFE's Guideline on Need and Desirability (2017). Additionally, the EIA Regulations, 2014 (as amended), require EAPs who undertake environmental assessments to have knowledge and consider relevant guidelines. A person applying for an EA must abide by the Regulations, which are binding on the applicant.

The DFFE’s Guideline on Need and Desirability (2017) sets out a list of questions which should be addressed when considering the need and desirability of a proposed development. These are divided into questions that relate to the aspects of ecological sustainability and justifiable economic and social development of the proposed project. Table 5-1 sets out the list of questions as per the Guideline.

Table 5-1: Questions to be Engaged with when Considering Need and Desirability, as per the DFFE Guideline on Need and Desirability (2017)

QUESTION	LOCATION IN REPORT/RELEVANCE
1. How will this development (and its separate elements / aspects) impact on the ecological integrity of the area?	
<p>1.1 How were the ecological integrity considerations taken into account?</p> <p>1.1.1. Threatened Ecosystems,</p> <p>1.1.2. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure,</p> <p>1.1.3. Critical Biodiversity Areas (“CBAs”) and Ecological Support Areas (“ESAs”),</p> <p>1.1.4. Conservation targets,</p> <p>1.1.5. Ecological drivers of the ecosystem,</p> <p>1.1.6. Environmental Management Framework,</p> <p>1.1.7. Spatial Development Framework, and</p> <p>1.1.8. Global and international responsibilities relating to the environment (e.g., RAMSAR sites, Climate Change, etc.)</p>	A Terrestrial Biodiversity was commissioned as part of the EA process. The study outlined the biodiversity sensitivities of the development footprint and recommended monitoring, mitigation and enhancement measures to limit impacts and enhance benefits have been included in the EMPr.
1.2 How will this development disturb or enhance ecosystems and / or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	
1.3 How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	See response provided above. Recommended monitoring, mitigation and enhancement measures have been included in the EMPr.
1.4 What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	Minimal volumes of construction waste will be generated by the proposed project. Measures to management waste have been included in the EMPr.
1.5 How will this development disturb or enhance landscapes and/or sites that constitute the nation’s cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	A Phase I Heritage Study was commissioned as part of the EA process. No cultural/heritage resources were identified within the development footprint. Recommended monitoring, mitigation and enhancement measures to limit impacts on

QUESTION	LOCATION IN REPORT/RELEVANCE
	cultural/heritage and enhance benefits have been included in the EMPr.
<p>1.6 How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>	
<p>1.7 How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system considering carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?</p> <p>1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e., de-materialised growth)? (Note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)</p> <p>1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e., what are the opportunity costs of using these resources this the proposed development alternative?)</p> <p>1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?</p>	<p>The proposed project does not relate directly to the development or use of non-renewable/ renewable resources; however, the proposed expansion of the parking area is considered an ancillary activity associated with the current mining operations at the Shaft 16 Complex, and association exploitation of platinum. In this regard, as part of on-going mine planning, the need for additional parking bays was identified, and will support the employees currently employed at the Shaft 16 Complex.</p>
<p>1.8 How were a risk-averse and cautious approach applied in terms of ecological impacts?</p> <p>1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</p> <p>1.8.2. What is the level of risk associated with the limits of current knowledge?</p> <p>1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</p>	<p>Assumptions, uncertainties and limitations associated with the compilation of this BAR are included in chapter 14. Compliance with the various legislative requirements is presented in this BAR.</p>

QUESTION	LOCATION IN REPORT/RELEVANCE
<p>1.9. How will the ecological impacts resulting from this development impact on people's environmental right in terms following:</p> <p>1.9.1. Negative impacts: e.g., access to resources, opportunity costs, loss of amenity (e.g., open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</p> <p>1.9.2. Positive impacts: e.g., improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?</p>	<p>The impact assessment is undertaken in accordance with SLR's methodology. The potential impacts and the significance thereof are presented in Appendix D.</p>
<p>1.10. Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socioeconomic impacts (e.g., on livelihoods, loss of heritage site, opportunity costs, etc.)?</p>	
<p>1.11. Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?</p>	
<p>1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?</p>	<p>The locality of the proposed project was determined due to the need to be in close proximity to the Shaft 16 Complex. As well as being near to the main access road. In this regard, location alternatives were not applicable to the proposed project. Design alternatives related to the reconfiguration of the parking area layout to avoid the underground Magalies water pipeline and the existing overhead powerline located within the development footprint.</p>
<p>1.13. Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?</p>	<p>The impact assessment is undertaken in accordance with SLR's methodology. The potential impacts and the significance thereof are presented in Appendix D.</p>
<p>2.1. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?</p> <p>2.1.1. The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area,</p> <p>2.1.2. Spatial priorities and desired spatial patterns (e.g., need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),</p> <p>2.1.3. Spatial characteristics (e.g., existing land uses, planned land uses, cultural landscapes, etc.), and</p>	<p>The need and desirability of the proposed project has been presented in terms of the consideration of the national, regional and local context.</p>

QUESTION	LOCATION IN REPORT/RELEVANCE
2.1.4. Municipal Economic Development Strategy (“LED Strategy”).	
2.2. Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area? 2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	The impact assessment is undertaken in accordance with SLR’s methodology. The potential impacts and the significance thereof are presented in Appendix D.
2.3. How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	The proposed project aims to improve health, safety and security for Impala’s employees based at the Shaft 16 Complex, through the provision of safe, secure and covered parking bays. Due to the nature of the proposed project, it is not anticipated to have an impact on intergenerational impact distribution.
2.4. Will the development result in equitable (intra- and inter-generational) impact distribution, in the short and long-term? Will the impact be socially and economically sustainable in the short- and long-term?	
2.5. In terms of location, describe how the placement of the proposed development will: 2.5.1. Result in the creation of residential and employment opportunities in close proximity to or integrated with each other, 2.5.2. Reduce the need for transport of people and goods, 2.5.3. Result in access to public transport or enable non-motorised and pedestrian transport (e.g., will the development result in densification and the achievement of thresholds in terms public transport), 2.5.4. Complement other uses in the area, 2.5.5. Be in line with the planning for the area, 2.5.6. For urban related development, make use of underutilised land available with the urban edge, 2.5.7. Optimise the use of existing resources and infrastructure, 2.5.8. Opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g., not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement), 2.5.9. Discourage "urban sprawl" and contribute to compaction/densification, 2.5.10. Contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs, 2.5.11. Encourage environmentally sustainable land development practices and processes, 2.5.12. Consider special locational factors that might favour the specific location (e.g., the location of a strategic mineral resource, access to the port, access to rail, etc.),	A staff complement of approximately 45 individuals would be required for the construction phase (skilled and unskilled job opportunities) of the proposed project. Procurement opportunities would be sourced locally, as far as possible. However, due to the limited nature and extent of the proposed project, the development is not anticipated to contribute the other factors mentioned.

QUESTION	LOCATION IN REPORT/RELEVANCE
<p>2.5.13. The investment in the settlement or area in question will generate the highest socio-economic returns (i.e., an area with high economic potential),</p> <p>2.5.14. Impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and</p> <p>2.5.15. In terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?</p>	
<p>2.6. How were a risk-averse and cautious approach applied in terms of socio-economic impacts?</p> <p>2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</p> <p>2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?</p> <p>2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</p>	<p>Assumptions, uncertainties and limitations associated with the compilation of this BAR is included in chapter 14. Compliance with the various legislative requirements is presented in this BAR.</p>
<p>2.7. How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:</p> <p>2.7.1. Negative impacts: e.g., health (e.g., HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</p> <p>2.7.2. Positive impacts. What measures were taken to enhance positive impacts?</p>	<p>The impact assessment is undertaken in accordance with SLR's methodology. The potential impacts and the significance thereof are presented in Appendix D.</p>
<p>2.8. Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g., over utilisation of natural resources, etc.)?</p>	
<p>2.9. What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?</p>	<p>An alternatives analysis was undertaken as part of the proposed project.</p>
<p>2.10. What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?</p>	<p>An EMPr has been compiled for the proposed project which will be implemented during the development's life cycle.</p>

QUESTION	LOCATION IN REPORT/RELEVANCE
2.11. What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	Due to the nature of the proposed project, this is not applicable.
2.12. What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	An EMPr has been compiled for the proposed project which will be implemented during the development's life cycle.
2.13. What measures were taken to: 2.13.1. Ensure the participation of all interested and affected parties, 2.13.2. Provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, 2.13.3. Ensure participation by vulnerable and disadvantaged persons, 2.13.4. Promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means, 2.13.5. Ensure openness and transparency, and access to information in terms of the process, 2.13.6. Ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge, and 2.13.7. Ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were be promoted?	The PPP for the proposed project was undertaken in terms of the EIA Regulations, 2014 (as amended) promulgated under NEMA. The PPP undertaken to date, as well as the proposed process for the remainder of the application process, is provided in section 7.2
2.14. Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g., a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	A staff complement of approximately 45 individuals would be required for the construction phase (skilled and unskilled job opportunities) of the proposed project. Procurement opportunities would be sourced locally, as far as possible.
2.15. What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	Project activities would comply with Impala's occupational health and safety policies and/or standards, as well as national legislation.
2.16. Describe how the development will impact on job creation in terms of, amongst other aspects: 2.16.1. The number of temporary versus permanent jobs that will be created, 2.16.2. Whether the labour available in the area will be able to take up the job opportunities (i.e., do the required skills match the skills available in the area), 2.16.3. The distance from where labourers will have to travel,	A staff complement of approximately 45 individuals would be required for the construction phase (skilled and unskilled job opportunities) of the proposed project. Procurement opportunities would be sourced locally, as far as possible. Due

QUESTION	LOCATION IN REPORT/RELEVANCE
<p>2.16.4. The location of jobs opportunities versus the location of impacts (i.e., equitable distribution of costs and benefits), and</p> <p>2.16.5. The opportunity costs in terms of job creation (e.g., a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.).</p>	to the nature of the proposed project, no job or procurement opportunities will be created post-construction.
<p>2.17. What measures were taken to ensure:</p> <p>2.17.1. That there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and</p> <p>2.17.2. That actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?</p>	The need and desirability of the proposed project has been presented in terms of the consideration of the national, regional and local context.
2.18. What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	Measures to mitigate environmental impacts associated with the proposed project have been included in the EMPr.
2.19. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	
2.20. What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	Impala will be responsible for the implementation of the measures included in the EMPr. The financial provision has been determined to cater for the costs associated with the rehabilitation of the environmental post-closure.
2.21. Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	The locality of the proposed project was determined due to the need to be in close proximity to the Shaft 16 Complex. As well as being near to the main access road. In this regard, location alternatives were not applicable to the proposed project. Design alternatives related to the reconfiguration of the parking area layout to avoid the underground Magalies water pipeline and the existing overhead powerline located within the development footprint.
2.22. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	The impact assessment is undertaken in accordance with SLR's methodology.

6. MOTIVATION FOR THE PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVES

This section provides a motivation for the preferred site and technology alternatives relative to the proposed project.

6.1 LOCATION ALTERNATIVES

The proposed project entails the expansion of the existing parking area and therefore it is most effective if it is adjacent to the current parking area. Similarly, the locality of the proposed parking area has been determined due to the need to be in close proximity to the Shaft 16 Complex, as well as being near the main access road. It follows that no site alternatives were considered due to this fixed position.

6.2 TECHNOLOGY ALTERNATIVES

Due to the nature and limited extent of the proposed project, no technology alternatives were considered.

7. FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE

This chapter describes the alternatives considered for the proposed project and summarises the process followed to reach the preferred alternative.

7.1 DETAILS OF THE DEVELOPMENT FOOTPRINT CONSIDERED

7.1.1 Site Alternatives

As mentioned in section 6.1, the locality of the proposed parking area has been determined due to the need to be in close proximity to the Shaft 16 Complex, as well as being near the main access road. It follows that no site alternatives were considered due to this fixed position.

7.1.2 Technology Alternatives

As mentioned in section 6.2, due to the nature and limited extent of the proposed project, no technology alternatives were considered.

7.1.3 Activity Alternatives

The project site adjacent to the Shaft 16 Complex is currently vacant and has not been earmarked for any non-mining-related development. The proposed expansion of the parking area is thus considered an ancillary activity associated with the current mining operations at the Shaft 16 Complex. In this regard, the need for additional parking bays was identified, as part of on-going mine planning, to accommodate the increasing number of employees coming to the Shaft 16 Complex with their own vehicles, and will improve health, safety and security for the employees. It follows that no other activity alternatives were considered.

7.1.4 No-Go Alternative

The No-Go alternative is the non-occurrence of the proposed project. The negative implications of not going ahead with the proposed project are as follows:

- Loss of opportunity to improve the health, safety and security of Impala's employees employed at the Shaft 16 Complex; and
- Lost job and procurement opportunities associated with the construction phase.

The positive implications of the no-go option are that there would be no effects on the biophysical environment within the development footprint.

7.2 DETAILS OF THE PPP FOLLOWED

The PPP was undertaken in accordance with the requirements of chapter 6 of the EIA Regulations, 2014 (as amended), promulgated under NEMA. In addition to this, consideration was also given to various public participation guidelines governed by the DFFE (refer to Table 4-1).

7.2.1 PPP Undertaken to Date

The PPP undertaken to date is provided in Table 7-1. Proof of the undertaking of the PPP associated with the pre-application phase and the application phase has been included in Appendix C.

Table 7-1: PPP Undertaken to Date

Step	Detail
Pre-Application Phase	
Stakeholder identification	<p>A project I&AP database was developed for the proposed project and comprises key I&APs (surrounding landowners, land users and community forums; neighbouring mines and industries, Non-Governmental Organisations and Associations, Parastatals and regulatory and commenting authorities (local and regional). The commenting authorities who have been identified include:</p> <ul style="list-style-type: none"> • DMRE; • DFFE; • Department of Water and Sanitation (DWS); • North West Department of Agriculture; • North West Department of Rural Development and Land Reform (DRDLR) (inclusive of the Land Claims Commissioner); • North West Department of Roads and Public Works; • North West Department of Rural, Environment and Agricultural Development; • North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT); • North West Parks and Tourism Board; • ESKOM; • SAHRA; • RLM; and • BPDM.
Consultation with Land Claims Commissioner	<p>The DRDLR (Land Claims Commissioner) in North West was contacted to confirm if there were any land claims on remaining extent of portion 3 of the farm Reinkoyalskraal 278 JQ. The Land Claims Commissioner confirmed that no land claims have been lodged on the property.</p>
Meetings with authorities	<p>Meetings with the DMRE and DEDECT were undertaken on 14 May 2021 and 12 May 2021, respectively. The meetings were undertaken virtually, via Microsoft Teams, and were facilitated by SLR. The main aims of the meetings were to present the proposed project, to propose stakeholder engagement strategies, to provide a platform for any initial concerns or queries to be raised and to obtain confirmation on who the designated competent authority would be for the proposed project.</p>
Meetings with key stakeholders	<p>Meetings with the Royal Bafokeng Nation/Royal Bafokeng Administration (RBN/RBA) and the Mine Community Leadership and Engagement Forum (MCLEF) were undertaken on 12 May 2021 and 18 May 2021, respectively. The meeting with RBA/RBN was undertaken virtually, via Microsoft Teams, and was facilitated by SLR. The meeting with MCLEF was undertaken in person and was facilitated by a local consultant, Grevix Services and Solutions (Grevix). The main aims of the meetings were to present the proposed project, to propose stakeholder</p>

Step	Detail
	<p>engagement strategies and to provide a platform for any initial concerns or queries to be raised.</p> <p>A follow up meeting with MCLEF was undertaken on 30 August 2021. The meeting was undertaken in person and facilitated by Grevix. The main aims of the follow-up meeting were to present the findings of the impact assessment, to provide feedback to issues and concerns raised at the initial meeting and to record any additional comments and concerns.</p>
Background Information Document (BID)	<p>A BID (English and Setswana) was compiled by SLR and was made available for a public and authority review period from 2 June – 5 July 2021 on SLR's websites (including a data-free option). The BID provided:</p> <ul style="list-style-type: none"> • Information about the proposed project; • Information about the baseline environment of the proposed project footprint; • Information regarding possible biophysical/cultural/socio-economic impacts associated with the proposed project activities; • Details pertaining to stakeholder engagement; and • Information on how I&APs and commenting authorities can have input into the environmental assessment process. <p>A registration and response form was attached to the BID, which provided I&APs with an opportunity to register as an I&AP and submit comments on the proposed project.</p> <p>A notification letter (English and Setswana) indicating the availability of the BID and providing the links to the SLR websites in order to access the BID, was provided to I&APs registered on the project database, via email on 2 June 2021. A reminder email was sent on 21 June 2021. A notification (English) indicating the availability of the BID and providing a link to the SLR data-free website in order to access the BID, was provided to I&APs registered on the project database, via SMS on 2 June 2021. A remainder SMS was sent on 21 June 2021.</p>
Site notices	<p>Grevix placed 50 laminated A2-sized site notices (English and Setswana) at key conspicuous positions in and around the Shaft 16 Complex, as well as the following nearby villages and towns on 2 and 3 June 2021:</p> <ul style="list-style-type: none"> • Chachalaza; • Kanana; • Serutube; • Lefaragatlha; • Phokeng; • Luka; • Mogono; • Freedom Park; and • Bobuampya. <p>The site notices provided information about the proposed project, details pertaining to stakeholder engagement, information on how I&APs can have input into the environmental assessment process, and information pertaining to the availability and access of the BID for review and comment.</p>

Step	Detail
Newspaper advertisements	Advertisements (English) were placed in two local newspapers and one national newspaper. These include the <i>Platinum Weekly</i> (4 & 5 June 2021), <i>Rustenburg Herald</i> (2 June 2021), and <i>Daily Sun</i> (4 & 5 June 2021). The advertisements provided information about the proposed project, details pertaining to stakeholder engagement, information on how I&APs can have input into the environmental assessment process, and information pertaining to the availability and access of the BID for review and comment.
Flyers	<p>Grevix distributed 2 000 A5-sized flyers (1 000 - English and 1 000 - Setswana) at key conspicuous positions in and around the Shaft 16 Complex, as well as the following nearby villages and towns on 2 and 3 June 2021:</p> <ul style="list-style-type: none"> • Chachalaza; • Kanana; • Serutube; • Lefaragatlha; • Phokeng; • Luka; • Mogono; • Freedom Park; and • Bobuampya. <p>The flyers provided information about the proposed project, details pertaining to stakeholder engagement, information on how I&APs can have input into the environmental assessment process, and information pertaining to the availability and access of the BID for review and comment.</p>
Application Phase	
BAR and Non-Technical Summary (NTS)	<p>The BAR (English) and NTS (English and Setswana) <u>were</u> made available for a 30-day public review and comment period from 8 September – 8 October 2021 in order to provide I&APs with an opportunity to comment on any aspect of the proposed project and the findings of the environmental assessment process. Full copies of the BAR and the NTS <u>were</u> placed on the SLR website (www.slrconsulting.com) and the SLR data-free website (https://slrpublicdoc.datafree.co/public-documents).</p> <p>A notification letter (English and Setswana) indicating the availability of the BAR and NTS and providing the links to the SLR websites in order to access the documents, was provided to I&APs registered on the project database, via email on 7 September 2021. A notification (English) indicating the availability of the documents and providing a link to the SLR data-free website in order to access the documents, was provided to I&APs registered on the project database, via SMS on 7 September 2021.</p>
Posters	<p><u>An email notification was provided to all MCLEF members on 3 September 2021, notifying them of the proposed placement of posters and distribution of flyers within the various communities.</u></p> <p>Grevix <u>placed</u> 50 laminated A2-sized posters (English and Setswana) where site notices were previously erected.</p>

Step	Detail
	The posters <u>provided</u> an overview of the findings of the environmental assessment and <u>included</u> links to the SLR websites that <u>could</u> be used to access the BAR and NTS.
Flyers	<p>Grevix <u>distributed</u> 2 000 A5-sized flyers (1 000 - English and 1 000 - Setswana) where flyers were previously distributed.</p> <p>The flyers <u>provided</u> an overview of the findings of the environmental assessment and <u>included</u> links to the SLR websites that <u>could</u> be used to access the BAR and NTS.</p>
Revised BAR and NTS	<p><u>This</u> revised BAR (English) and NTS (English and Setswana) <u>is</u> compiled and updated with comments received from the I&APs. This revised BAR and NTS <u>have been</u> submitted to the DMRE for consideration and decision-making. Full copies of the revised BAR and the NTS <u>have been</u> placed on the SLR website (www.slrconsulting.com) and the SLR data-free website (https://slrpublicdoc.datafree.co/public-documents).</p> <p>A notification letter (English and Setswana) indicating the submission of the revised BAR and NTS to the DMRE, as well as the links to the SLR websites in order to access the documents, <u>was</u> provided to I&APs registered on the project database, via email, <u>on 18 November 2021</u>. A notification (English) indicating the submission of the revised BAR and NTS to the DMRE, as well as the links to the SLR websites in order to access the documents, <u>was</u> provided to I&APs registered on the project database, via SMS, <u>on 18 November 2021</u>.</p>
<u>Meetings with key stakeholders</u>	<u>A meeting was undertaken with the Kanana Business Forum (KBF) on 15 October 2021. The meeting was undertaken virtually, via Microsoft Teams, and was facilitated by SLR. The main aims of the meeting were to present an overview of the proposed project, to present the findings of the impact assessment and to record any additional comments and concerns.</u>
DMRE decision	<p>All I&APs registered on the project database will be notified once the decision to grant or refuse EA is received. The notification letter (English and Setswana) will include information on how to access the decision, as well as information pertaining to the appeal process. The notification letter will be provided to I&APs registered on the project database via email. A notification (English) of the afore-mentioned will also be provided by SMS.</p> <p>Grevix will distribute 250 hard copies of the notification letter (125 - English and 125 – Setswana) where flyers were previously distributed.</p>

7.3 SUMMARY OF ISSUES RAISED BY I&APS

A summary of the issues and concerns raised to date have been included in Table 7-2. All written comments received to date, and issues raised at meetings that have been captured in meeting minutes, are provided in Appendix C.

Table 7-2: Full Record of Issues Raised by I&APs to date

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
Authorities				
Gasewabone Thebe (DEDECT)	12 May 2021 (at DEDECT pre-application meeting)	What is the total area to be cleared?	The total area to be cleared measures at approximately 2.5 ha.	Chapter 3
		What is the current land use at the project site?	The project site is adjacent to the existing Shaft 16 Complex. The land is not being utilised and is currently vacant, consisting of indigenous vegetation. A powerline runs through the area.	Section 7.4.3.2
		If the land is being used for agricultural purposes, the Department of Agriculture must be included as a commenting authority.	The project site is not currently utilised for agricultural purposes; however, the North West Department of Agricultural and the North West Department of Rural, Environment and Agricultural Development has been included in the I&AP database.	Table 7-1
Motshabi Mohlali (DEDECT)	12 May 2021 (at DEDECT pre-application meeting)	What pollution impacts, other than air quality, have been identified as part of the proposed project? I.e., how will stormwater be managed at the parking area?	Stormwater/surface water run-off at the proposed parking area will be channelled to the existing stormwater canal adjacent to the parking area.	Chapter 9
		What does the design of the parking area entail? Will it be bare sand or paved?	The parking area will be placed on bare sand, similar to the existing parking area.	Chapter 3
	6 October 2021 (email)	<u>I asked who the project has been assigned to. When you lodge an application with the Department, we assign it to an officer.</u>	<u>Mr. Piet Moima, of SLR, provided the following response to Ms. Motshabi Mohlali via email on 6 October 2021: “The DMRE is the competent authority for the project, therefore there has been no Case Officer assigned from DEDECT’s side to our knowledge”.</u>	=

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
	<u>7 October 2021 (email)</u>	<u>Please may you submit a hard copy to our 80 Kerk Street, Rustenburg Office, so that the report can be speedily assigned to an officer and reviewed by the department.</u>	<u>A hard copy version of the full BAR was sent to DEDECT on 8 October 2021. A follow-up was made by Mrs Rizqah Baker, and it was confirmed, via telephone, that DEDECT received the BAR on 11 October 2021.</u>	=
	<u>12 October 2021 (email)</u>	<u>We confirm having received the draft BAR on the 11 October 2021. Please note that the request has been assigned to Ms Tshegofatso Nkone reachable at 055 371 2203 tshegolekgari@nwpg.gov.za and/or Rustenburg Officer, No. 80 Kerk Street, Rustenburg, 0300. The file reference number is NWP/DMR/50/2021. Kindly quote this reference number and the name of the officer it has been assigned to in any future correspondence in respect of the application. If you need any clarification about this acknowledgement letter, please contact Ms. Rose Molemane at 078 788 0687.</u>	<u>These comments are noted.</u>	=
Tshegofatso Nkone / Portia Krisjan (DEDECT)	<u>21 October 2021 (email)</u>	<u>The draft BAR and in respect of the above mentioned proposed, received by this Department on 11 October 2021 has reference.</u> <u>Following the review of the draft BAR the Department notes that the proposed site is zoned Aquatic ESA Type 2 and Terrestrial CBA 2 as per the North West Biodiversity Sector Plan (2015).</u>	<u>This comment is noted.</u> <u>This information is not correct. As mentioned in section 7.4.1.5, the project area does not fall within any ESAs or CBAs as defined in the North West Biodiversity Sector Plan (2015). This has been confirmed in the Terrestrial Biodiversity Study and the Aquatic Compliance Statement compiled for the proposed project.</u>	= Section 7.4.1.5 and Appendix F

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
		<p><u>The Terrestrial Biodiversity Assessment report compiled by STS dated August 2021 identifies the site as having low ecological significance due to prior cultivation and presence of alien plant species.</u></p> <p><u>The Freshwater Ecosystem Impact Report compiled by SAS dated 17 August 2021 has identified no freshwater ecosystems within the proposed project site.</u></p> <p><u>The Department therefore has no objection to the proposed expansion and recommends that all specialist recommendations are included in the EMPr.</u></p>	<p><u>This information is correct and is supported by the information contained in the Terrestrial Biodiversity Assessment.</u></p> <p><u>This information is correct and is supported by the information contained in the Terrestrial Biodiversity Assessment.</u></p> <p><u>This comment is noted. All specialist recommendations have been incorporated into the EMPr for the proposed project.</u></p>	<p><u>Appendix F</u></p> <p><u>Appendix F</u></p> <p><u>Table 9-1, Table 10-1 and Appendix D</u></p>
<p><u>Natasha Higgitt (SAHRA)</u></p>	<p><u>6 September 2021 (email)</u></p>	<p><u>Good afternoon. SAHRA must provide comments during the draft BAR stage in order for our comments to be included in the final BAR. Should there be a revised BAR following the commenting period, this can be submitted on the case where we can issue additional comments if needed to include in the final BAR. My colleague Elijah is the case officer for the North West. Please inform him when the parking area application is created.</u></p>	<p><u>Mrs Rizqah Baker, of SLR, notified Mr. Elijah Katsetse, of SAHRA, via email on 8 October 2021, that the full BAR and NTS was uploaded on SAHRIS for review and comment.</u></p>	<p><u>=</u></p>
	<p><u>12 October 2021 (SAHRIS)</u></p>	<p><u>The following comments are made as a requirement in terms of section 38(8) of the NHRA in the format provided in section 38(4) of the NHRA and must be included in the final BAR and EMPr:</u></p>	<p><u>This comment is noted. The revised BAR and EMPr have been updated, where appropriate.</u></p>	<p><u>=</u></p>

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
		<ul style="list-style-type: none"> • <u>38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has no objections to the proposed development.</u> • <u>38(4)b – The recommendations of the specialists are supported and must be adhered to. No further additional specific conditions are provided for the development.</u> • <u>38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule.</u> • <u>38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase /Mimi Seetelo 012 320 8490), must be alerted</u> 	<p><u>These comments are noted.</u></p> <p><u>The Chance Find Protocol has been updated to include this.</u></p> <p><u>The Chance Find Protocol has been updated to include this.</u></p>	<p><u>=</u></p> <p><u>Table 10-1</u></p> <p><u>Table 10-1</u></p>

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
		<p><u>immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule.</u></p> <ul style="list-style-type: none"> • <u>38(4)d – See section 51(1) of the NHRA regarding offences.</u> • <u>38(4)e – The following conditions apply with regards to the appointment of specialists:</u> <ul style="list-style-type: none"> <u>i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA.</u> • <u>The final BAR must be submitted to the SAHRIS application for record purposes.</u> • <u>The decision regarding the EA application and MP application must be submitted to the SAHRIS</u> • <u>application for record purposes.</u> 	<p><u>This comment is noted.</u></p> <p><u>The Chance Find Protocol has been updated to include this.</u></p> <p><u>These comments are noted.</u></p>	<p>=</p> <p><u>Table 10-1</u></p> <p>=</p>

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
		<ul style="list-style-type: none"><u>Should you have any further queries, please contact the designated official using the case number quoted above in the case header.</u>		
Neo Nthoesane (DMRE)	5 October 2021 (email)	<u>I have not received the BAR. Please send me a copy so I can comment.</u>	<u>Mrs Rizqah Baker, of SLR, called Ms. Neo Nthoesane on 5 October 2021 to obtain clarity on Ms. Neo Nthoesane’s comment.</u>	=
		<u>I have noted that the document referred to is the draft, following the conversation with Rizqah. The DMRE will give comments on the final BAR once it is submitted.</u>	<u>This comment is noted.</u>	=
Tribal Authorities, Community Leadership and Ward Councillors				
Kgosana Rapetsana	18 May 2021 (at MCLEF focussed meeting)	Is the parking area being expanded due to new employment opportunities?	The parking area is being expanded due to the increasing number of employees coming to the Shaft 16 Complex with their own vehicles.	Chapter 5
		What is the real impact of the project?	Approximately 45 unskilled to semi-skilled workers will be offered employment opportunities during the construction phase of the proposed project. The potential negative environmental impacts associated with the project may include increase in traffic and disturbance of heritage resources. However, any heritage resources identified by the specialist will be demarcated and excluded from the project footprint.	Chapter 3
Councillor Lefyedi	18 May 2021 (at MCLEF focussed meeting)	Procurement opportunities should be extended to Lefaragathla and not be limited to Kanana	The comment is noted. Procurement opportunities will be sourced from the local area and would not be limited to Kanana.	Chapter 3
		What is the estimated project value?	The total value of the project is yet to be determined.	N/A

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
Councillor Mekgoe	18 May 2021 (at MCLEF focussed meeting)	Will the project be awarded to two contractors? Will there be subcontracting opportunities for the local companies?	As mentioned above, procurement opportunities will be sourced from the local area. It has not yet been determined how many companies would be required for the construction phase of the proposed project.	Chapter 3
Councillor Mputle	18 May 2021 (at MCLEF focussed meeting)	The new parking area will also result in an increase in crime in the area. Can Impala increase the security around the project?	Impala will undertake a risk assessment to address the safety of pedestrians using the access road and security concerns associated with the proposed project.	Appendix D
Webster Diale	30 August 2021 (at MCLEF feedback meeting)	Why is road disturbance and traffic safety assessed as insignificant?	The impact has been assessed as insignificant due to the project designs, which allow for the development of the off-ramp and on-ramp and a dedicated taxi pick-up, drop-off and waiting area. These designs minimise traffic impacts and are expected to increase public safety.	Appendix D
<u>Community Organisations and Businesses</u>				
Alfred Moatshe (KBF)	27 September 2021 (email)	The name of our organization is Kanana Business Forum, we are an organisation recognised by the DMRE RLM, RBA, Impala and the community of Kanana at large hence this makes us no. 1 stakeholder in our community. We are very much disappointed that we were never consulted on the matter of the parking area project at 16#, hence we request an urgent meeting with you. Your prompt response on this matter will be highly appreciated.	<p>Mrs. Rizqah Baker, of SLR, provided the following response to Mr. Alfred Moatshe via email on 4 October 2021: “Thank you for your email. Our apologies for not including you on our stakeholder database. Your organisation has been included and will be informed of the project for the duration of the process. We acknowledge your request for a meeting and would like to invite you to an online meeting at your earliest convenience. Please let me know what day and time suits you best. We look forward to liaising with you and your organisation on this project.”</p> <p>The KBF was invited to attend a meeting on 8 October 2021. Due to technical difficulties, the KBF was not able to attend the meeting.</p>	-

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
	<u>11 October 2021 (email)</u>	<u>We truly apologise for what transpired on the day of the meeting. We had a very hard time with the network on our area due to Eskom load shedding. We proposed the rescheduling of the meeting this week Friday if it is fine with you and your team. We have arranged a proper venue for ourselves in case of loadshedding. We apologise for any inconvenience caused by our previous position.</u>	<u>The KBF was invited to attend a meeting on 15 October 2021.</u>	-
	<u>15 October 2021 (at KBF focussed meeting)</u>	<u>Has SLR consulted the local community of Kanana directly, by conducting door-to-door interviews?</u> <u>What methodology was utilised by SLR for the consultation process?</u>	<u>The PPP for the proposed project did not include door-to-door interviews with community members of Kanana. Other PPP strategies utilised for the proposed project entailed distribution of a BID, placement of posters and site notices, distribution of flyers and notifications in the form of emails and SMS’.</u> <u>The PPP for the proposed project has been undertaken under the provisions of the EIA Regulations, 2014 (as amended) promulgated under NEMA. SLR has also undertaken additional measures, such as the distribution of a BID, flyers and placement of project posters, as part of the PPP that are not required under NEMA.</u>	<u>Table 7-1</u> <u>Table 7-1</u>
		<u>As a registered stakeholder, will the KBF be furnished with information pertaining to the project?</u>	<u>All I&APs registered on the project database will be furnished with information pertaining to the proposed project, including updates on the progress of the EA and EMPr Amendment processes, as well as the final decision issued by the DMRE. As a registered stakeholder on the project database, the KBF will also receive this information.</u>	<u>Appendix C</u>

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
		<u>The socio-economic impact of the proposed project cannot be determined to be insignificant, especially to the residents of Kanana who live in close proximity to the proposed project.</u>	<u>Inward migration and the associated economic impact and the change in land use have been identified as the key socio-economic impacts associated with the proposed project. Due to the limited number of short-term employment opportunities that would be made available during the construction phase in the context of the greater mining operations in the area, it is not expected to lead to inward migration with resultant pressure on municipal services. It follows that the impact is still deemed to be insignificant. Furthermore, the land on which the project footprint is located has been used historically for cultivation, is currently vacant and has not been earmarked for development other than mining-related at this stage. The socio-economic impact resulting from a change in land use is therefore still deemed to be insignificant.</u>	<u>Appendix C</u>
<u>Rapula Modibane (KBF)</u>	<u>15 October 2021 (at KBF focussed meeting)</u>	<u>Where did the I&AP database for the proposed project originate from?</u> <u>Was the taxi industry consulted as part of the PPP?</u>	<u>The I&AP database utilised for the proposed project was initially provided by Impala. The database provided a starting point to which to engage with I&APs, given that Impala engages with the local community on a regular basis. In line with the EIA Regulations, 2014 (as amended) promulgated under NEMA, the I&AP was updated with additional stakeholders. I&APs requesting to be registered on the project database were also added to the project database.</u> <u>Representatives from taxi associations were not directly consulted. No representatives from any taxi association have made contact with SLR regarding the proposed project to date.</u>	<u>Table 7-1 and Appendix C</u>

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
		<p><u>Was an impact assessment undertaken for the existing parking area?</u></p> <p><u>The appointment of Grevix as a service provider is a big issue given that they are not from the community of Kanana.</u></p> <p><u>The socio-economic of the proposed project will be long-term.</u></p>	<p><u>An EIA process was undertaken for the existing parking area as part of the development of the greater Shaft 16 Complex.</u></p> <p><u>During a previous project for Impala, it was requested by MCLEF that SLR involve local resources in the environmental process. Impala recommended a number of local companies to SLR who in turn provided proposals to SLR to undertake the required scope of work. It was determined, based on the best proposal at the time, that Grevix would be utilised for the process. For the proposed project, Grevix was appointed again as it was determined that they were the best suited to undertake the work required. Grevix's services will be utilised for the remainder of the environmental process.</u></p> <p><u>As mentioned above, due to the limited number of short-term employment opportunities that would be made available during the construction phase in the context of the greater mining operations in the area, it is not expected to lead to inward migration with resultant pressure on municipal services. It follows that the impact is still deemed to be insignificant. Furthermore, the land on which the project footprint is located has been used historically for cultivation, is currently vacant and has not been earmarked for development other than mining-related at this stage. The socio-economic impact resulting from a change in land use is therefore still deemed to be insignificant.</u></p>	<p>-</p> <p>-</p> <p><u>Appendix C</u></p>

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
Godfrey Moatshe (KBF)	15 October 2021 (at KBF focussed meeting)	<p><u>Thank you for providing this platform to raise queries. This is the first time that the community of Kanana has been engaged with regarding matters of the Shaft 16 Complex since 2003.</u></p> <p><u>How has the impact on noise been determined? Were any noise impact studies undertaken for the proposed project?</u></p> <p><u>Who is SLR and where do they come from?</u></p> <p><u>It is acknowledged that SLR has been appointed but when was this opportunity</u></p>	<p><u>The proposed project has been presented at the MCLEF and it is understood that local leaders from surrounding communities, including Kanana, are members of MCLEF. Furthermore, and as mentioned previously, the PPP for the proposed project commenced with the distribution of a BID, distribution of flyers, placement of site notices and advertisement in local newspapers. In this regard, stakeholders have been afforded the opportunity to participate and raise concerns pertaining to the proposed project. It is understood that through the afore-mentioned PP strategies, the KBF became aware of the proposed project.</u></p> <p><u>The noise-generating activities associated with the proposed project is limited in time and extent, i.e., to the project area and to the construction phase (12 months). During operation, the proposed project does not present additional sources of noise-generating activities that differ from those at the existing parking area i.e., movement of vehicles, access control. In this regard, any potential impact to the environment in terms of noise impacts is expected to be negligible. The impact has therefore been rated as being insignificant.</u></p> <p><u>SLR Consulting (South Africa) Pty Ltd is an environmental and engineering consultancy who undertake work across South Africa on behalf of a range of industrial clients, including the majority of the large mining companies.</u></p> <p><u>This comment will be communicated to Impala for future reference.</u></p>	<p><u>Table 7-1 and Appendix C</u></p> <p><u>Appendix D</u></p> <p><u>=</u></p>

I&AP	Date comment received	Issue raised	Response provided	Report reference where the issue and responses were incorporated
		<p><u>advertised to the local community? Impala continues to appoint companies outside of Kanana when the community has the relevant skills and specialities.</u></p> <p><u>SLR and Impala are stealing from the Kanana community by not appointing locals for the project.</u></p>	<p><u>This comment will be communicated to Impala for future reference.</u></p>	
<u>Emmanuel Seome (KBF)</u>	<u>15 October 2021 (at KBF focussed meeting)</u>	<p><u>Have the impacts on surface water/stormwater been determined as part of the proposed project? How will the drainage system affect those closest to the project area?</u></p>	<p><u>The contamination of surface water resources has been assessed as part of the proposed project. A stormwater culvert is located west of the project footprint and stormwater/surface water run-off at the parking area will be channelled to the existing stormwater canal adjacent to the parking area. The proposed project presents a potential for long-term contamination through accidental spills and leaks from trucks, plant, equipment and vehicles during all phases of the project. At elevated pollution concentrations, these contaminants can be harmful; however, it is important to note that the proposed project does not present sources of contaminants that differ from those at the existing parking area. The impact has therefore been rated as INSIGNIFICANT; however, the management actions outlined in this EMP are required to ensure the rating is achieved.</u></p>	<u>Appendix D</u>

7.4 ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE PROPOSED PROJECT AND THE ALTERNATIVES

An understanding of the biophysical, cultural/heritage and socio-economic context and sensitivity within which the proposed project is located is important in understanding the potential impacts of the project. This section provides a description of these attributes in the receiving environment of the project footprint.

7.4.1 Baseline Biophysical Environment Affected by the Proposed Activity

7.4.1.1 Geology

Introduction

Mineral resources can be sterilised and/or lost through the placement of infrastructure and activities in close proximity to resources, by preventing access to potential mining areas. Geological processes can also influence soil forms and the potential for palaeontological resources.

A baseline situational analysis is described below in order to understand:

- The potential for sterilisation of mineral reserves; and
- The potential for geological lineaments such as faults and dykes. Faults, dykes and other lineaments can act as preferential flow paths of groundwater, which can influence both the dispersion of potential pollution plumes and the inflow of water into mine workings.

Data Sources

Information in this section was sourced from the Impala EIA and EMPr Consolidation Report (SLR, 2012), the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013) and the BAR and EMPr for the Flash Dryer Project (SLR, 2021).

Description

Regional Geology: Impala is situated on the Bushveld Igneous Complex (BIC). The BIC is an intrusive igneous body, extending about 400 km from east to west and about 350 km from north to south. The BIC consists of crystalline material such as norites and pyroxenites. The BIC comprises an unweathered and intact rock matrix with negligible matrix porosity and permeability, and planes of discontinuity in the rock matrix, including both faults and joint plant (collectively referred to as fractures).

Local Geology: Impala is located on the Western Limb of the BIC, where the layers dip at approximately 10° - 20° into the basin. The ultramafic-mafic rocks of the BIC are known as the Rustenburg Layered Suite (RLS). The rocks of the RLS range from ultrabasic pyroxenites and anorthosites in the lower parts, to norite, gabbro and magnetite gabbro in the upper parts. The RLS is subdivided into the Lower, Lower Critical, Upper Critical and Main Zones. The Shaft 16 Complex and the project footprint is located on the Pyramid Gabbro Norite of the Main Zone.

Lineaments: Dykes are dolerite intrusions that vary in thickness and can extend up to 40 m thick in places. The local geology is also characterised by dykes that range in thickness from 0.2 to 2.0 m. No dykes have been identified beneath the project footprint. However, some dykes occur further afield from the project footprint. The underground workings have encountered numerous faults and to date the maximum

displacement has been 10 m. There are larger, as well as reverse faults in the local geology; although uncommon. No faults were identified within close proximity or within the project footprint (see Figure 7-1).

Conclusion

Where new permanent infrastructure is placed within close proximity to mineable ore there is the possibility that sterilisation can occur. It is not envisaged that the location of the proposed parking area will result in any sterilisation of minerals. No dykes and faults have been identified beneath the project footprint. There are; however, dykes located further afield from the project footprint. These lineaments are not considered to be preferential flow paths for contamination and therefore do not affect the site selection or design of the proposed parking area.

7.4.1.2 Topography

Introduction

Changes to topography through the development of the proposed project may impact on surface water drainage, visual aspects and the safety of both people and animals. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013) and the BAR and EMPr for the Flash Dryer Project (SLR, 2021).

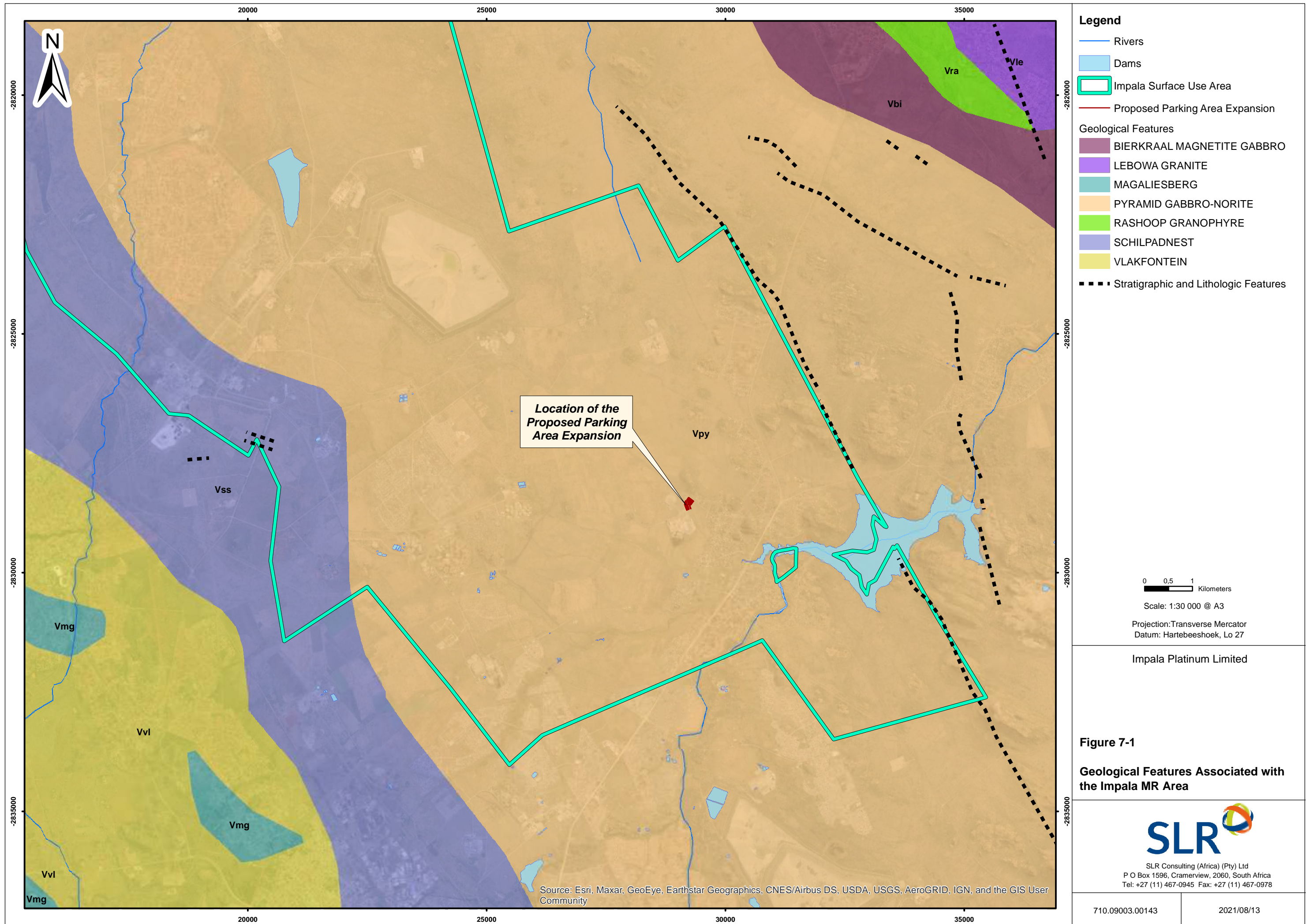
Description

Regional Topography: The broader environment is characterised by gentle undulating plains at an altitude of approximately 1 130 meters above mean sea level (mamsl), approximately 10 km north-east of the northern-most section of the Magaliesberg Range. Peaks in this section of the Magaliesberg rise to heights of between 1 400 and 1 500 mamsl. The northern parts of Impala's MR area are largely undisturbed and therefore regarded as being in its natural state. The southern sections of Impala's MR area have been disturbed due to the presence of mining activities, infrastructure and communities.

Local Topography: The project footprint can be described as fairly flat. A stormwater culvert is located adjacent to the site, creating a depression across the site in a north-westerly to south-easterly direction. An overhead transmission line also runs across the site in the same afore-mentioned direction. Majority of the project footprint has been transformed by historic cultivation; therefore, the topography of the site has been altered.

Conclusion

Mining activities, infrastructure and communities have the potential to alter the topography and the natural state of undisturbed areas. An alteration of the natural topography has the potential to impact both animals and people. The proposed project; however, does not pose safety risks to third parties and animals, as the topography within the project footprint has already been largely transformed, and because the project footprint is located adjacent to the existing access-controlled Shaft 16 Complex, the security measures of which will be extended as part of the proposed project.



7.4.1.3 Climate

Introduction

Climate can influence the potential for environmental impacts and related mine design. Specific issues are listed below:

- Rainfall could influence erosion, evaporation, vegetation growth, rehabilitation planning, dust suppression, and surface water management planning;
- Temperature could influence air dispersion through impacts on atmospheric stability and mixing layers, vegetation growth, and evaporation which could influence rehabilitation planning; and
- Wind could influence erosion, the dispersion of potential atmospheric pollutants, and rehabilitation planning.

To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the Air Quality Specialist Report for the Proposed Flash Dryer (Airshed, 2020) and the BAR and EMPr for the Flash Dryer Project (SLR, 2021).

Description

Climate: The project footprint falls within the Highveld Climatic Zone. Of the mean annual precipitation, 85% falls during summer thunderstorms. Thunderstorms generally occur every three to four days in summer and are of short duration and high intensity. Temperatures in this climatic zone are generally mild, but low minima can be experienced in winter due to clear night skies. Frost characteristically occurs in the winter months. Generally, winds are light, but south-westerly winds associated with thunderstorms are typically strong and gusty.

Rainfall: Rainfall data for several hydrological years (i.e., for the period 2016 – 2020) is provided in Table 7-3. Notably, there was no rainfall received for a period of five months in 2019, and for a period of four months in 2020. No rainfall measurements are available for three months in 2020; thus, the total measured rainfall is likely less than what the actual rainfall for 2020 will be. Total average annual rainfall from October 2016 to September 2020 is 672 mm. The rainfall for 2016, 2017, 2018, and 2019 was 713.8 mm, 529.6 mm, 501.3 mm and 934.1 mm, respectively. Rainfall in this area occurs mostly during the summer months, although it also rains during spring and autumn. The winter months are dry.

Table 7-3: Monthly rainfall data measured in mm (October 2016 - September 2020)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep
Oct 2016 – Sept 2017	26.7	94.8	133.57	156.6	221.1	4.8	46.1	25	0	3	0	0
Oct 2017 – Sept 2018	78.3	59	44.8	82.3	110.7	114.9	39.4	4.7	0	1.5	0	4
Oct 2018 – Sept 2019	15	28.7	104	180.3	46.2	32.3	94.8	0	0	0	0	0
Oct 2019 – Sept 2020	7	166.3	266	172	70.9	105.4	144	0	2.5	0	0	0

Wind: The period wind field and diurnal variability in the wind field are shown in Figure 7-2, while the seasonal variations are shown in Figure 7-3. The wind field is dominated by winds from the southerly sectors. Calm conditions occurred 0.39% of the time, with the average wind speed over the period being 1.35 m/s. Wind from the east and east-south-east having higher speeds were greater during the day with a lower frequency of calm conditions (0.21% during the day) than during the night (0.57% during the night). Daytime shows dominant easterly and east-south-easterly components to the wind field and during the night winds these winds decrease, and the south-south-westerly winds dominate. Strong winds in excess of 4 m/s occurred most frequently during spring followed by summer. Calm conditions occurred most frequently during the winter months. Although it may appear on the wind roses that the northerly winds are not being measured correctly, it was determined that the frequency of these winds are 0.3%. Assuming all the missing data is for northerly sector, the maximum amount of time that the winds may originate from the north is 1.4%.

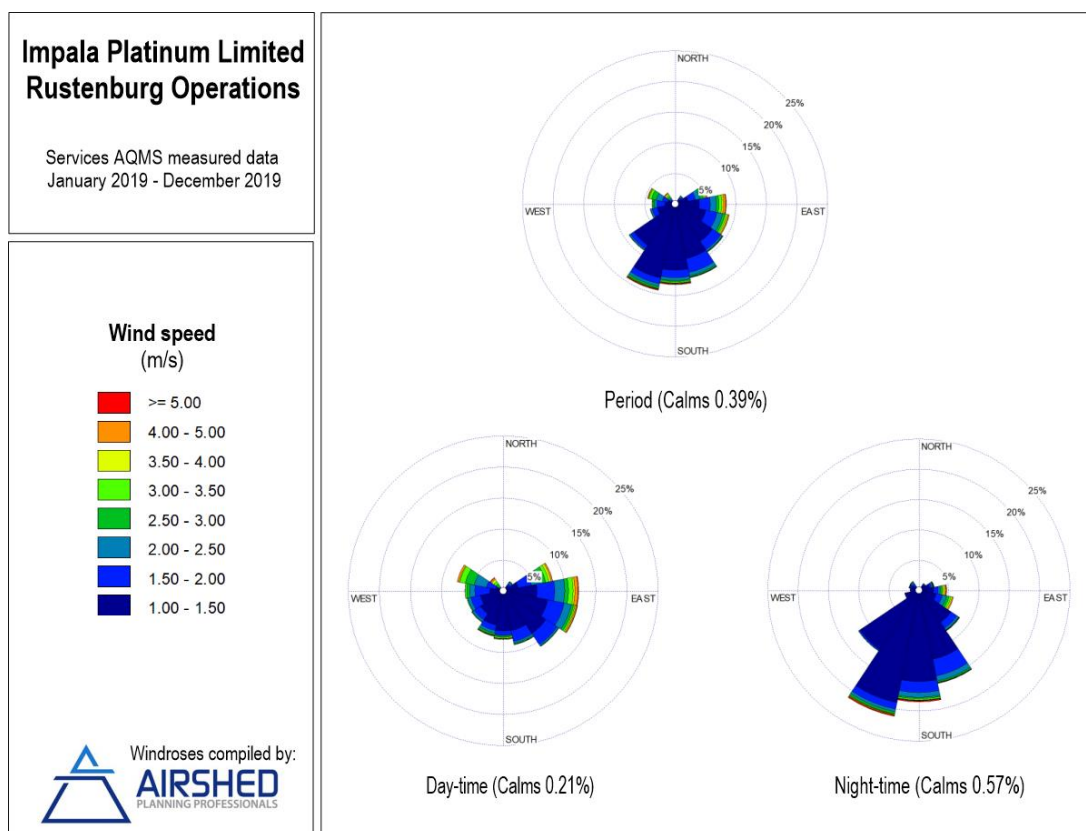


Figure 7-2: Period, Day- and Night-Time Wind Roses (AERMET Processed Measured Data, Jan 2019 - Dec 2019)

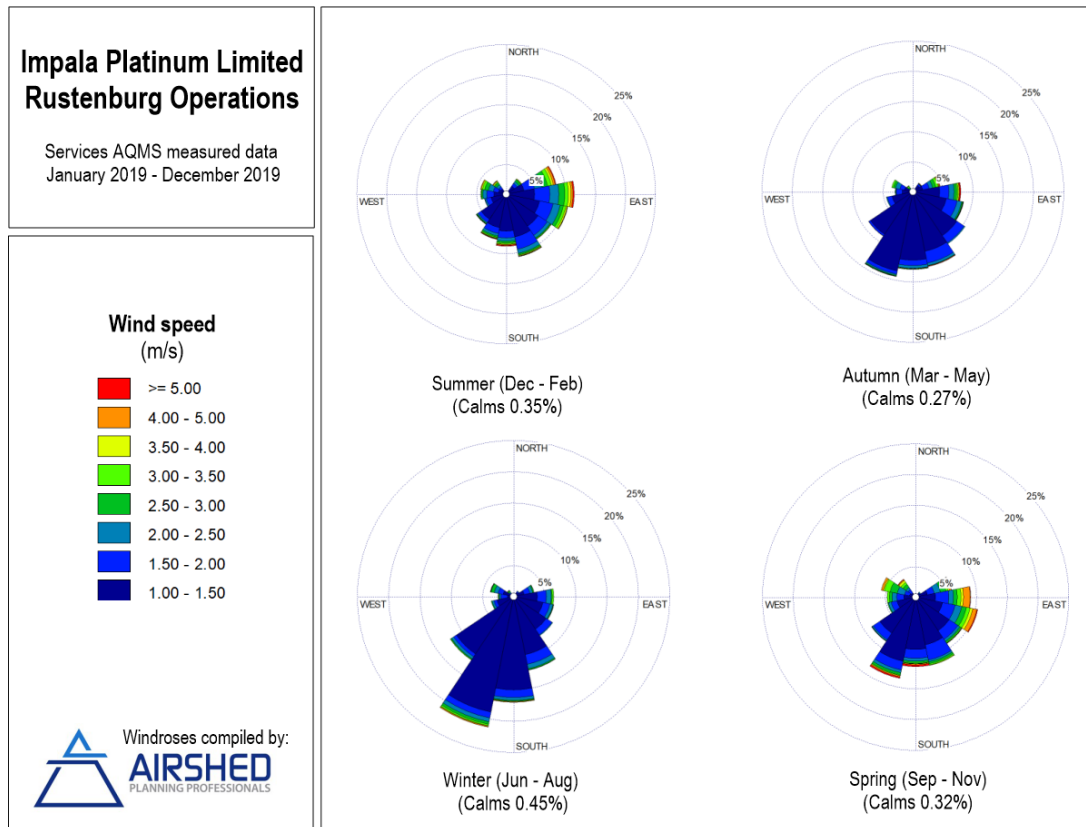


Figure 7-3: Seasonal Wind Roses (AERMET Measured Data, Jan 2019 - Dec 2019)

Ambient Temperature: Monthly mean, maximum and minimum temperatures for the period January – December 2019, are given in Table 7-4. Diurnal temperature variability, for the period January – December 2019, is presented in Figure 7-4. Temperatures ranged between 1°C and 38°C. The highest temperatures occurred in October and the lowest in July. During the day, temperatures increase to reach the maximum at approximately 14h00 in the afternoon. Ambient air temperature decreases to reach the minimum at approximately 06h00 i.e., just before sunrise.

Table 7-4: Monthly Temperature Summary (AERMET Processed Measures Data, Jan - Dec 2019)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hourly Minimum (°C)	16	14	15	8	6	2	1	5	4	11	15	12
Monthly Average (°C)	25	24	25	19	17	13	13	18	20	25	25	24
Hourly Maximum (°C)	36	36	36	32	28	27	28	30	33	38	36	37

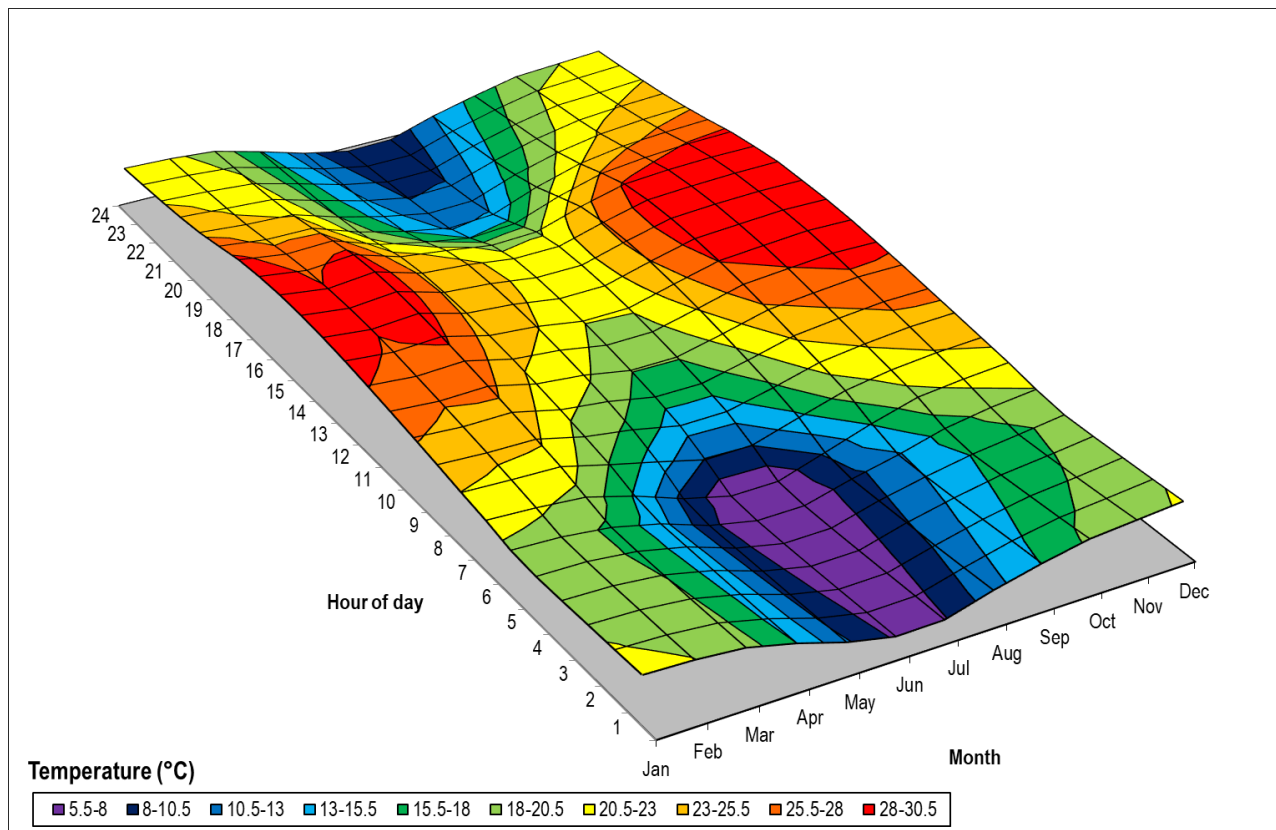


Figure 7-4: Diurnal Temperature Profile (AERMET Processed Measures Data, Jan - Dec 2019)

Conclusion

The project footprint is characterised by rainy seasons with heavy thunderstorms that last for short periods at a time. High rainfall levels can increase the erosion potential and the formation of erosion gullies. The mixing of layers resulting in the formation of temperature inversions and the presence of cloud cover limits the dispersion of pollutants into the atmosphere. Wind significantly affects the amount of material that is suspended from exposed surface to the atmosphere. The wind speed determines the distance of downward transport, as well as the rate of dilution of pollutants in the atmosphere. Where wind speeds increase above 5 m/s, the possibility of dust dispersion increases, and this will require consideration from a planning and management perspective. However, in general, the wind field is dominated by winds from the south, while average wind speeds were captured at 1.35m/s. These climatic aspects have been taken into consideration as part of the proposed project.

7.4.1.4 Soils and Land Capability

Introduction

Soils are an important component of most ecosystems. As an ecological driver, soil is the medium in which most vegetation grows and a range of vertebrates and invertebrates exist. In the context of mining operations, soil is even more significant if one considers that mining is a temporary land use, whereafter rehabilitation (using soil) is the key to re-establishing post closure land capability that will support post closure land uses.

Mining projects have the potential to damage soil resources through physical loss of soil and/or the contamination of soils, thereby impacting on the soils' ability to sustain natural vegetation and altering land capability. Contamination of soils may in turn contribute to the contamination of surface and groundwater

resources. Loss of the topsoil resource reduces chances of successful rehabilitation and restoration. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013) and the BAR and EMPr for the Flash Dryer Project (SLR, 2021).

Description

Soil Distribution and Forms: The distribution of soils is closely linked to the topography and parent materials from which they are derived. The better drained soils are generally associated with a less basic parent material; while the more structured and more clay-rich (less easily drained) soils are associated with the intrusive, basic parent material. Numerous soil forms have been identified within the Impala MR area. These include Hutton, Shortlands & Valsrivier, Mispah, Mayo a&& Milkwood, Sterkspruit & Swartland, Arcadia, Sepane, Rensburg, Kroonstad & Katspruit, Glenrosa, Westleigh, Witbank and Outcrop. The soil forms underlying the project footprint are that of Sterkspruit & Swartland. These soil forms comprise the following characteristics:

- Blocky to prismatic in structure;
- Generally grey to dark brown or black in colour;
- Exhibits evidence of expansive clays, and displays a 2:1 swelling;
- Moderate to high erodibility;
- Low intake rates and moderate water-holding capabilities; and
- A fair range in effective rooting depths from 200 mm – 600 mm.

Land Capability: The land capability within the Impala MR area is a mixture of grazing, wilderness and wetland with a small percentage consisting of arable potential. The land capability within the project footprint is that of grazing.

Conclusion

Soils forms within the project footprint are blocky to prismatic in structure, exhibit moderate to high erodibility and are relatively shallow with a high clay content which allows for high water retention. The land capability within the project footprint is that of grazing. In this regard, soil management is important if the land capability is to be appropriately reinstated as part of closure activities.

7.4.1.5 Biodiversity

Introduction

In the broadest sense, biodiversity provides value for ecosystem functionality, aesthetic, spiritual, cultural, and recreational reasons. The known value of biodiversity and ecosystems is as follows:

- Soil formation and fertility maintenance;
- Primary production through photosynthesis, as the supportive foundation for all life;
- Provision of food and fuel;
- Provision of shelter and building materials;
- Regulation of water flows and water quality;
- Regulation and purification of atmospheric gases;

- Moderation of climate and weather;
- Control of pests and diseases; and
- Maintenance of genetic resources.

The establishment of infrastructure, as well as certain supportive activities, have the potential to result in the loss of vegetation, habitat and related ecosystem functionality through physical disturbance and/or contamination of soil and/or water resources. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013), the BAR and EMPr for the Flash Dryer Project (SLR, 2021), the Plant, Animal and Avifauna Compliance Statement compiled for the Parking Area Expansion (STS, 2021), the Terrestrial Biodiversity Study for the Parking Area Expansion (STS, 2021) and the Aquatic Biodiversity Compliance Statement for the Parking Area Expansion (SAS, 2021).

Description

Flora: Impala's MR area is located within the Savannah Biome. The Savannah Biome comprises various vegetation types, four of which are within the MR area. These are the Zeerust Thornveld, Marikana Thornveld, Central Sandy Thornveld and the Norite Koppies Bushveld vegetation types. Of the four aforementioned vegetation types, the project footprint is located within the Marikana Thornveld (see Figure 7-5).

The Marikana Thornveld has been identified by SANBI as an important thornveld requiring conservation and care. The Marikana Thornveld occurs on plains from the Rustenburg area in the west, through Marikana and Brits to the Pretoria area in the east. The Marikana Thornveld is characterised by open *Vachellia Karroo* woodland, occurring in valleys and slightly undulation plains and some lowland hills.

Historic aerial photography indicates that the entirety of the project footprint has been cultivated historically, which has resulted in a significant alteration in vegetation structure, floral species composition and the ability of the habitat to support a high diversity of faunal species. In this regard and following a field assessment undertaken by STS and SAS on 26 May 2021, no riparian and wetland habitats were identified, and two habitat units were distinguished at the project footprint (see Figure 7-6). These are as follows:

- Transformed Areas: These areas include current built-up or transformed areas associated with the main road leading up to the Shaft 16 Complex, as well as heavily modified land where little to no indigenous vegetation remains; and
- Secondary Marikana Thornveld: These areas are currently vegetated and comprises indigenous vegetation; however, due to significant historic transformation of this area (long-term cultivation), with no rehabilitation efforts, the vegetation is species poor.

Further to the above, floral communities within the project footprint are considered species poor and characterised by a dominance of graminoids, scattered woody species and a general lack of herbaceous species. A full list of floral species identified within the project footprint is provided in Table 7-5. Identified alien species have been shaded in red.



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Legend**
- Proposed Parking Area Expansion
 - Vegetation Types
 - Secondary Marikana Thornveld
 - Transformed

0 30 60 Meters


Scale: 1:2 000 @ A3

Projection: Transverse Mercator
Datum: Hartbeeshoek, Lo 27

Impala Platinum Limited

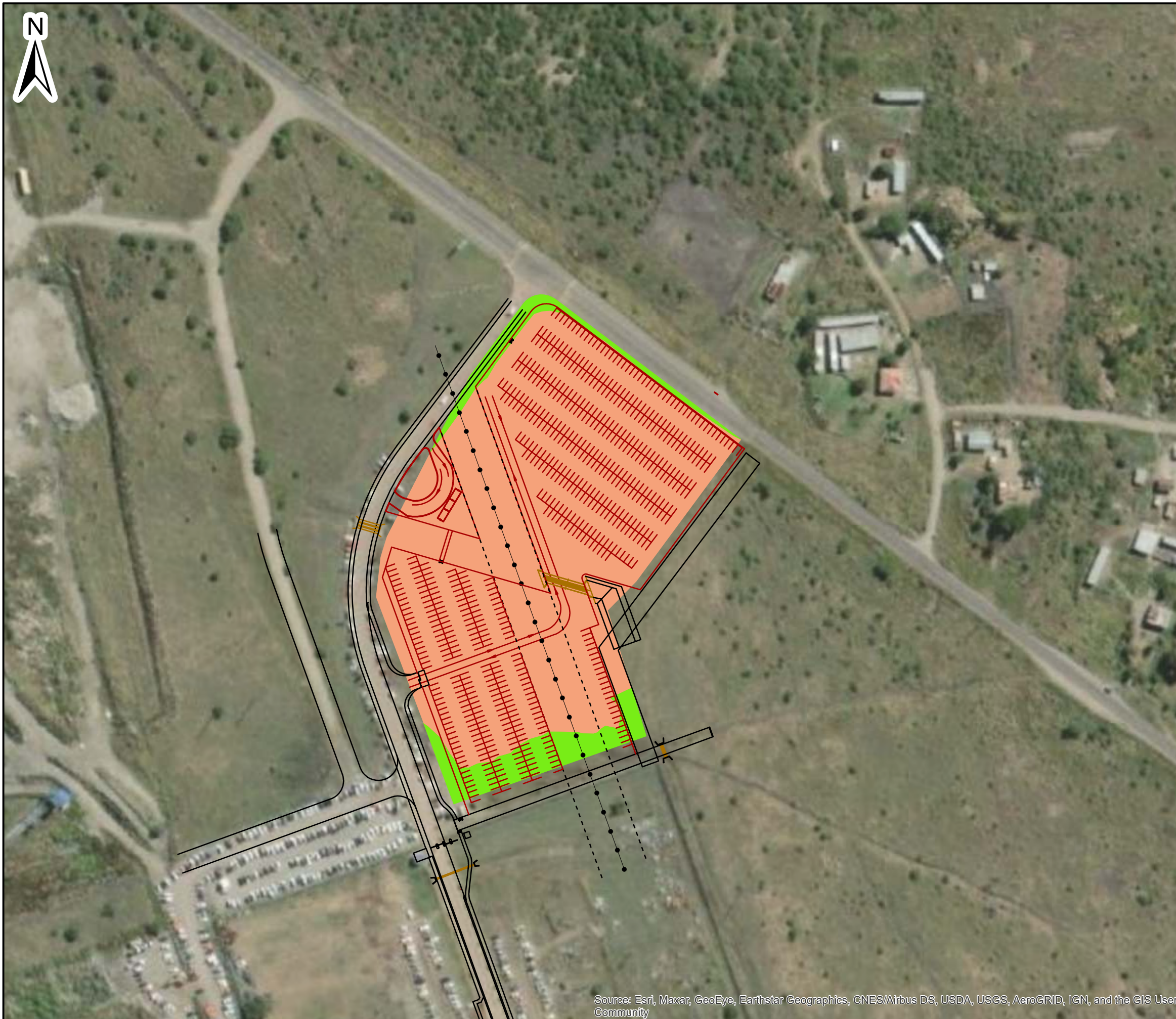
Figure 7-5

Vegetation Types



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Tel: +27 (11) 467-0945 Fax: +27 (11) 467-0978

710.09003.00143	2021/08/19
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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

Proposed Parking Area Expansion

Habitat Units

Moderately Low Sensitivity

Low Sensitivity

03060

Meters

Scale: 1:2 000 @ A3

Projection:Transverse Mercator

Datum: Hartebeeshoek, Lo 27

Impala Platinum Limited

Figure 7-6

Habitat Units Identified Within the Project Footprint

SLR

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Table 7-5: Floral Species Identified with the Project Footprint

Species Type	Species				
Woody Species	<i>Asparagus suaveolens</i>	<i>Diospyros lycioides subsp. guerkei</i>		<i>Senegalia mellifera subsp. detinens</i>	
	<i>Sesbania cf. bispinosa</i>	<i>Vachellia nilotica subsp. kraussiana</i>		<i>Vachellia tortilis subsp. tortilis</i>	
Forb Species	<i>Albuca sp.</i>	<i>Bidens pilosa</i>	<i>Crabbea hirsute</i>	<i>Erigeron sp.</i>	<i>Gladiolus sp.</i>
	<i>Hermannia depressa</i>	<i>Hermannia transvaalensis</i>	<i>Hypoxis rigidula</i>	<i>Indigofera cf. comosa</i>	<i>Jamesbrittenia aurantiaca</i>
	<i>Kyphocarpa angustifolia</i>	<i>Nidorella anomala</i>	<i>Polygala hottentotta</i>	<i>Rhynchosia monophylla</i>	<i>Schkuhria pinnata</i>
	<i>Sida dregei</i>	<i>Solanum sisymbriifolium</i>	<i>Tagetes minuta</i>	<i>Zinnia perviana</i>	
Succulent Species	<i>Opuntia ficus-indica</i>				
Graminoid Species	<i>Aristida bipartite</i>	<i>Brachiaria cf. serrata</i>	<i>Cenchrus ciliaris</i>	<i>Cymbopogon caecius</i>	
	<i>Cynodon dactylon</i>	<i>Dichanthium annulatum</i>	<i>Enneapogon cenchroides</i>	<i>Eragrostis chloromelas</i>	
	<i>Eragrostis sp.</i>	<i>Heteropogon contortus</i>	<i>Ischaemum afrum</i>	<i>Setaria cf. incrassate</i>	
	<i>Setaria sp.</i>	<i>Sporobolus africanus</i>	<i>Sporobolus stapfianus</i>	<i>Themeda triandra</i>	

As the natural floral community structure and composition have been altered, floral species of conservation concern (SCC) are unlikely to establish viable populations, especially within areas that have been completely transformed. In this regard, no nationally threatened SCC (i.e., red-data list (RDL) plants), in terms of Section 56 of the NEM: BA were identified within the project footprint, nor were any species observed from the NEM: BA Threatened or Protected Species (TOPS) list for the North West Province. This is because no suitable habitat is present for these species on site. Furthermore, provincially protected species, listed on the Transvaal Nature Conservation Ordinance, No. 12 of 1983 (TNCO) Schedule 11 - Protected Plants, were also not observed within the project footprint.

It is important to note that as part of the proposed project, consideration was given to provincial and national biodiversity sensitivity databases, such as the National Protected Areas Expansion Strategy (NPAES) 2010, the South African Conservation Areas Database (SACAD) 2020, the South African Protected Area Database (SAPAD) 2020, the Mining and Biodiversity Guidelines 2013, the North West Biodiversity Sector Plan 2015, the Important Bird Areas (IBAs) 2015, the National Freshwater Ecosystem Priority Areas (NFEPA) Database 2011, the DWS Research Quality Information Services (RQIS) Database 2014, the National Biodiversity Assessment (NBA) 2018 and the NEM: BA. The project footprint does not fall within any sensitive habitats identified in these databases.

Fauna: The most common mammals occurring within the Impala MR Area are the Multi-Mammate Mouse, the Namaqua Rock Mouse and the Rock Dassie. Mammals are predominantly located in areas such as rocky outcrops, dense mattered vegetation and moist marshy habitats, etc., where favourable habitats exist. Five

RDL bird species were identified within the Impala MR Area, these includes *Mycteria ibis*, *Phoenicopiterus roseus*, *Sagittarius serpentarius*, *Falco biarmicus* and *Mirafra cheniana*. Protected bird species in terms of the TNCO that have been identified within the Impala MR area include *Phalacrocorax lucidus*, *Phalacrocorax africanus*, *Streptopelia semitorquata*, *Streptopelia capicola*, *Streptopelia senegalensis*, *Corvus albus*, *Passer melanurus* and *Quelea*.

Following a site assessment undertaken by STS on 26 May 2021, it was revealed that faunal diversity within the project footprint was low. Species observed were limited to common and widely occurring species known to survive in areas of decreased sensitivity and that have integrated well into anthropogenic settings. The project footprint is fragmented and isolated from surrounding natural habitat via man-made barriers, with roads being the immediate barrier and built-up areas (Shaft 16 Complex and Kanana residential area) forming additional barriers in the larger, local landscape. These barriers influence the presence of expected fauna – although this applies largely to megaherbivores and large predators which are completely absent from the study area (apart from domestic cattle). Smaller mammals can more readily move through and potentially utilise the habitat within the Secondary Marikana Thornveld Habitat Unit, e.g., Scrub Hare scatt was noted on site. Mammal species also likely to utilise the study area for foraging include *Herpestes sanguinea* (Slender Mongoose) and small rodents.

The Secondary Marikana Thornveld Habitat Unit provides some suitable habitat for invertebrates, but invertebrate diversity is not anticipated to be high in the project footprint area. Whilst no arachnid species were observed during the field assessment undertaken by STS, it is expected that the project footprint will support a moderately low diversity as there are some suitable habitat and food resources available. The project footprint is also expected to harbour a low diversity of common reptilian species. No amphibian species were encountered during the field assessment undertaken by STS on 26 May 2021, due to the lack of any wetland or riparian habitat within the project footprint. Avifaunal species were the most abundant species noted within the project footprint and surrounding area. Species observed were common species with broad habitat requirements capable of utilising anthropogenically modified landscapes. A full list of observed or expected species within the project footprint is provided in Table 7-6.

Table 7-6: Faunal Species Identified with the Project Footprint

Species Type	Scientific Name	Common Name
Mammals	<i>Lepus saxatilis</i>	Scrub Hare
	<i>Herpestes sanguinea</i>	Slender Mongoose
Avifauna	<i>Acridotheres tristis</i>	Common Myna
	<i>Bostrychia hagedash</i>	Hadedda Ibis
	<i>Corythaixoides concolor</i>	Grey Go-Away Bird
	<i>Streptopelia capicola</i>	Cape Turtle-Dove
	<i>Trachyphonus vaillantii</i>	Crested Barbet
	<i>Vanellus coronatus</i>	Crowned Lapwing
	<i>Passer domesticus</i>	House Sparrow
Amphibians	None	
	<i>Acanthopplus discoidalis</i>	Brown Armoured Corn cricket

Species Type	Scientific Name	Common Name
Insects	<i>Acanthacris ruficornis</i>	Garden Locust
	<i>Acrididae Grasshopper</i>	-
	<i>Belenois aurota</i>	Brown-Veined White
	<i>Danaus chrysippus</i>	African Monarch
	<i>Junonia hierta</i>	Yellow Pansy
	<i>Mantodea</i>	-
Reptiles	<i>Gerrhosaurus</i>	Typical Pated Lizard
Arachnids	None	

As the habitat within the project footprint does not provide suitable food resources or shelter to support faunal SCC, the probability of any such species utilising the area is highly unlikely. In this regard, no faunal SCC were identified on site. It is unlikely that faunal SCC will utilise the habitat within the project footprint for breeding, although it may be possible for such species to cross the area.

Conclusion

Two habitat units were identified within the project footprint, namely Secondary Marikana Thornveld and Transformed Areas. Due to historic cultivation, floral communities within the project footprint are considered species poor. In this regard, no floral or faunal SCC have been identified within the project footprint. Despite this, it is important to consider what the pre-disturbance natural vegetation would have been and use this information to inform rehabilitation measures post-closure. Various alien species were identified and would need to be managed as part of the proposed project, as well as part of rehabilitation measures post-closure.

7.4.1.6 Surface Water

Introduction

Surface water resources include drainage lines and paths of preferential flow of stormwater runoff. Mine-related activities have the potential to alter the drainage of surface water through the establishment of infrastructure and/or result in the contamination of the surface water resources through seepage and/or spillage of process materials and non-mineralised (general and hazardous) and mineralised wastes. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013) and the BAR and EMPr for the Flash Dryer Project (SLR, 2021).

Description

Catchments: The Impala MR area is located within Limpopo A Drainage Region and within three quaternary catchments of the Lower Vaal Water Management Area (WMA) (see Figure 7-7). These catchments are listed below:

- Quaternary catchment A22F, with a catchment area of 1 688 km² and a mean annual runoff (MAR) of 16 million m³;

- Quaternary catchment A22H, with a catchment area of 579 km²; and a MAR of 23.7 million m³; and
- Quaternary catchment A22J, with a catchment area of 591 km²; and a MAR of 17.1 million m³.

The project footprint is located within the afore-mentioned quaternary catchment A22H, also known as the Hex River Catchment. The Hex River Catchment feeds into the Limpopo River.

Surface Water Resources: No/limited flow occurs in the Impala MR area during the dry season. These streams are therefore considered to be non-perennial in nature. Evidence of flow during the wet season was found in larger streams. These are assumed to flow steadily following larger rainfall events, peaking for short periods. Dams identified within the Impala MR area are the Bospoort (border of MR area) and Rockwall Dams, located approximately 2.5 km south-east and 10.5 km north-west of the project area, respectively (see Figure 7-7). No watercourses have been identified within or in close proximity to the project footprint.

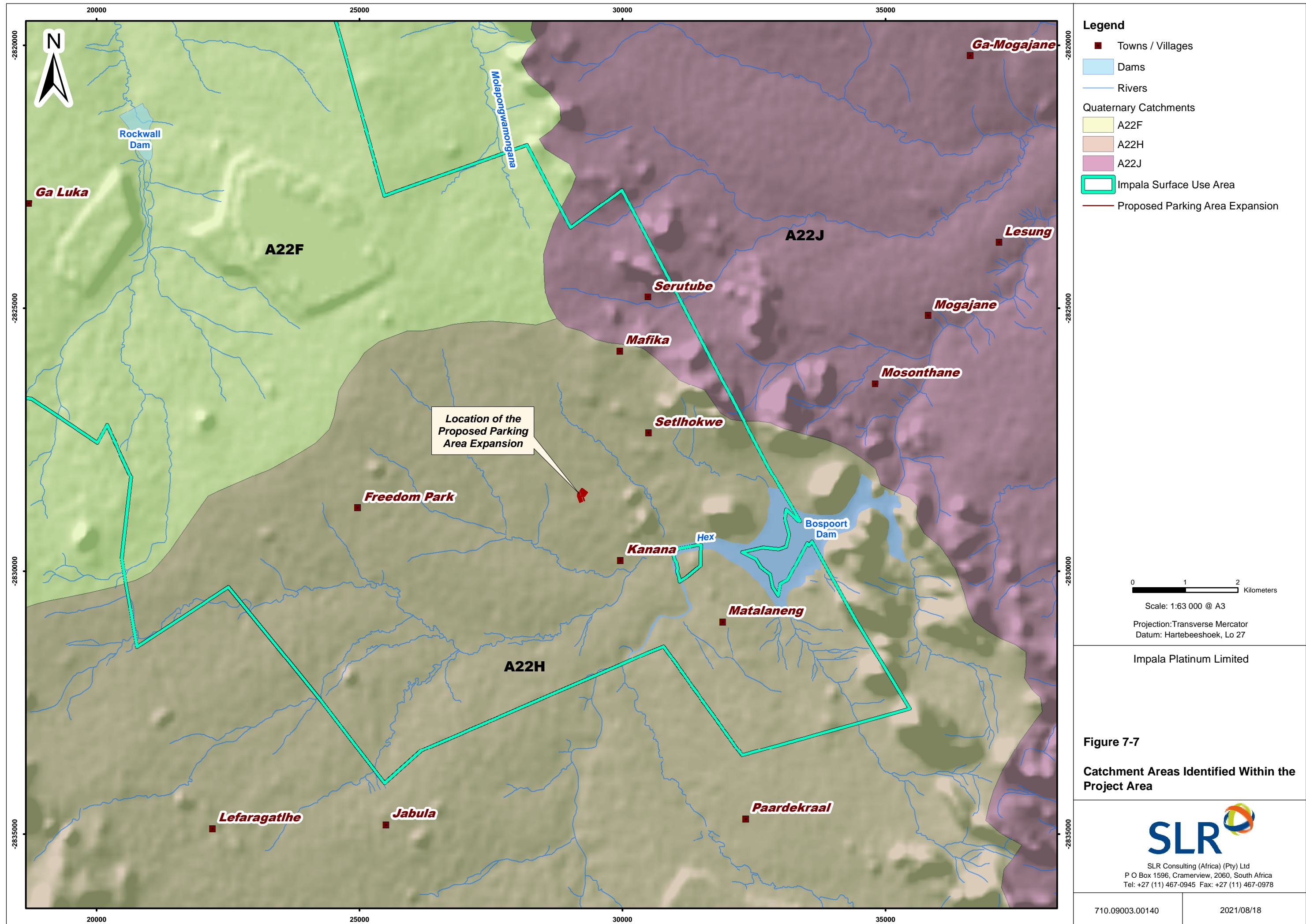
According to the NFEPA 2011 and NBA 2018 databases, there are no wetlands within the project footprint. The NFEPA 2011 database indicates that an unchanneled valley bottom (UCVB) wetland is located approximately 1.4 km downgradient of the project footprint. This UCVB is considered to be in a largely modified ecological condition.

A stormwater culvert is located west of the project footprint. Given the hardened surfaces around the project area, it is expected that water flows through this culvert and collects in parts of the project footprint. Due to the relatively flat topography and the clay-like soils, water is likely to remain trapped here and is only lost through evaporation.

Surface Water Use: Many communities within the Impala MR area have access to reticulated water supply; however, it is possible that surface water is still abstracted from watercourses for domestic purposes and livestock watering. Water in the Bospoort Dam is used for domestic, recreation and agricultural purposes, while water at the Rockwall Dam is used for livestock watering.

Conclusion

Mining infrastructure has the potential to influence contributions of runoff to the catchment and related natural drainage patterns. In addition to this, mining activities and infrastructure present contamination sources that have the potential to pollute surface water resources when water is available in the non-perennial drainage lines. Despite there being no watercourses or wetlands located in the vicinity of the proposed project, there is evidence of a preferential flow path of water as a result of the stormwater culvert located on site. This flow path must be taken into account in the design of the proposed parking area.



7.4.1.7 Groundwater

Introduction

Groundwater is a valuable resource and is defined as water which is located beneath the ground surface in soil/rock pore spaces and in the fractures of lithologic formations. Activities such as the handling and storage of hazardous materials and handling and storage of mineralised and non-mineralised wastes have the potential to impact groundwater resources, both to the environment and third-party users, through potential pollution. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013) and the BAR and EMPr for the Flash Dryer Project (SLR, 2021).

Description

Aquifer: Based on the South African Aquifer Classification System, the aquifer underlying the Impala MR area is generally classified as a minor aquifer system. Within this minor aquifer system, the possibility exists that there will be zones that can be classified as major aquifer systems. These zones are likely to be associated with geological features such as the Hex River fault, which is associated with significant volumes of poor-quality water.

Groundwater Flow: The infiltration of water from the shallow weathered aquifer system to the deeper fractured bedrock aquifer system is strongly heterogeneous and requires permeable soils, or permeable horizons (i.e., 'infiltration routes'), as well as 'open' and interconnected fracture systems in the bedrock. Within the Impala MR area and immediately above under-mined zones, the shallow weathered aquifer may be drained due to slow vertical leakage to the dewatered, deeper fractured aquifer. However, the shallow aquifer has the potential to be replenished relatively quickly during sustained rainfall periods.

Due to local recharge and discharge, groundwater divides developed beneath the major surface water divides. Evidence of this is provided by a generally strong correlation between groundwater level elevation and topography and the observed groundwater flow directions. It can be assumed that the groundwater table follows the surface topography based on a very good correlation between the measured head and topography. In addition, horizontal groundwater flow is generally in accordance with surface water flow, such that the regional groundwater flow is generally north-west and northwards towards the Elands River, as well as south and south-east in the direction of the Bospoort Dam and Hex River.

Groundwater Levels: Impala's Groundwater Database indicates that groundwater levels in the shallow weathered aquifer vary between 3.7 and 19.3 metres below ground level (mbgl), with an average depth of 6.8 mbgl. The groundwater level for the deeper fractured aquifer varies between 9.3 and 48.6 mbgl, with an average depth of 21.8 mbgl.

Groundwater Use: Groundwater quality is influenced by existing mining operations in the broader area. Boreholes within and surrounding the project area are used for groundwater monitoring purposes. As mentioned previously, communities within the Impala MR area generally have access to reticulated water supply. It follows that use of groundwater for domestic purposes is generally limited.

Conclusion

The proposed project is located on a minor aquifer with an average depth of 6.7 mbgl. Due the nature of the proposed project, it is not anticipated that groundwater would be affected.

7.4.1.8 Air Quality

Introduction

Existing sources of emissions in the region and the characterisation of existing ambient pollution concentrations are fundamental to the assessment of cumulative air impacts. A change in ambient air quality can result in a range of impacts, which in turn may cause a disturbance and/or health impacts to nearby receptors. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013) and the BAR and EMPr for the Flash Dryer Project (SLR, 2021).

Description

Regional Air Quality: The contribution of various sources of emissions to ambient particulate and gaseous concentrations within the Rustenburg region is of interest given that elevated concentrations have been recorded in and around the Rustenburg area. The most significant sources located within the Rustenburg region include:

- Stack, vent and fugitive emissions from industrial operations;
- Stack emissions from boiler operations;
- Stack emissions from incineration operations;
- Fugitive emissions from quarrying and mining operations;
- Fugitive dust emissions from tailings impoundments which are associated with Anglo Platinum, Impala, Lonmin, Aquarius, Xstrata-Merafe, International Ferro-metals, Tharisa Minerals and Bafokeng Rasimone Platinum Mine;
- Vehicle tailpipe emissions ;
- Household fuel combustion (coal, wood);
- Biomass burning; and
- Various miscellaneous fugitive dust sources, including agricultural activities, wind erosion of open areas, vehicle-entrainment of dust along paved and unpaved roads.

Local Air Quality: The key operations and activities that contribute to the air pollution within the Impala MR area include:

- Point source emissions from listed activities at the smelter operations (stack and fugitive emissions);
- Ventilation emissions from underground mine workings (NO_x, CO_x and particulates);
- Open cast operations;
- Dust generated from the tailings dams and spills along the delivery pipelines;
- Diesel generators;
- Vehicle tailpipe emissions;

- Materials handling operations (e.g., crushing, tipping of waste rock and ore, conveying of ore, stockpiles);
- Vehicle activity on paved and unpaved roads (during construction, operation and decommissioning); and
- Wind erosion from exposed working surfaces.

These emissions contribute towards both nuisance value, mainly in the immediate area of the source (large particle deposition) and potential increased health impacts (PM₁₀ in particular).

Potential Receptors: Air Quality Sensitive Receptors (AQSR) generally include places of residences and areas where members of the public may be affected by air pollution. Sensitive receptors within a 10 km radius of the proposed project area include Kanana, Mmatshetshele and Lekoneng residential areas, the R510 road and the Bospoort Dam to the east, Mosonthal-Marubithi and Lesung residential areas to the north-east, Mafika and Serutuba residential areas to the north, Freedom Park residential area to the west and Chachalaza and Boitekong residential areas and Boitekong Mall to the south.

Dust Fallout Data: Dust fallout sampling is being undertaken at Impala for both external (off-site/residential) and internal (on-site) buckets. The network includes monitoring at 36 locations (27 non-residential sites and 9 residential sites) in accordance with ASTM D1739 (1970). Dust fallout rates at the external sampling sites from January 2016 to June 2020 are summarised in Table 7-7. There was one exceedance of the NDCR limit for residential areas at Platinum Village in November 2018 (it is believed that this sample was contaminated or tampered with). The operations off-site dust fallout rates shown by the sampling complies with the NDCR as there were no exceedances of more than two times per year at a site or for consecutive months at a site.

Table 7-7: Dust Fallout Rates Summary for External Buckets

Dustfall Rate (NDCR Limit for Residential Areas = 600 mg/m ² -day)												
Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Boschoek Primary												
2016	ND	ND	ND	37	31	17	27	17	10	99	59	74
2017	49	34	60	23	10	30	19	23	31	53	89	83
2018	98	87	44	47	81	24	27	109	198	67	47	116
2019	90	118	26	51	21	53	64	47	87	65	65	37
2020	58	57	102	29	33	33	-	-	-	-	-	-
Ga-Luka South												
2016	27	31	10	33	18	7	26	24	21	43	54	54
2017	19	13	27	33	32	37	21	31	51	72	39	54
2018	164	122	33	26	34	31	22	41	103	57	39	180
2019	141	89	75	64	37	47	98	97	59	40	144	49
2020	10	44	59	12	46	57	-	-	-	-	-	-

Dustfall Rate (NDCR Limit for Residential Areas = 600 mg/m ² -day)												
Ga-Luka Primary												
2016	19	129	155	63	90	97	122	42	52	59	102	133
2017	70	64	134	48	67	41	68	66	121	63	181	ND
2018	86	265	105	23	37	173	68	102	86	51	128	129
2019	108	233	203	196	33	150	543	233	185	133	326	170
2020	26	156	163	40	30	30	-	-	-	-	-	-
Ga-Luka North												
2016	173	48	148	47	58	21	30	11	175	75	168	59
2017	27	34	133	43	28	46	33	79	155	65	115	95
2018	65	95	182	64	107	27	71	83	228	ND	ND	184
2019	24	41	51	27	36	14	97	65	181	194	321	250
2020	ND	67	229	22	76	88	-	-	-	-	-	-
Ga-Luka Village Tailings												
2016	381	73	35	ND	ND	ND	ND	ND	ND	ND	ND	ND
2017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2019	ND	ND	ND	33	26	138	97	104	57	87	126	59
2020	58	64	53	58	26	159	-	-	-	-	-	-
Ga-Luka Village Shaft 17												
2016	274	36	92	36	42	19	29	23	79	100	72	58
2017	25	23	58	ND	15	22	23	41	80	113	37	105
2018	84	70	57	16	33	22	14	71	93	85	91	40
2019	189	406	79	25	13	31	82	46	81	96	78	121
2020	65	69	175	5	22	45	-	-	-	-	-	-
Phokeng Village												
2016	ND	ND	ND	56	24	17	33	11	170	90	109	69
2017	51	39	122	18	25	29	22	32	189	122	75	143
2018	73	32	31	17	38	16	14	37	48	30	24	79
2019	57	77	18	22	12	36	18	46	39	25	32	91
2020	19	15	44	17	38	13	-	-	-	-	-	-
Freedom Park												
2016	109	35	43	72	19	18	47	45	38	57	82	99
2017	114	175	57	ND	15	7	36	34	ND	66	41	
2018	36	61	52	38	31	34	557	49	81	87	68	85
2019	18	69	40	26	37	42	62	68	70	114	270	50
2020	46	93	ND	7	10	16	-	-	-	-	-	-

Dustfall Rate (NDCR Limit for Residential Areas = 600 mg/m ² -day)												
Platinum Village												
2016	106	51	24	42	14	21	28	36	21	50	36	59
2017	17	47	28	9	31	31	18	31	40	37	68	41
2018	99	66	39	16	108	101	87	65	39	37	9186*	65
2019	71	47	38	79	32	38	35	7	72	116	60	119
2020	75	42	76	53	20	15	-	-	-	-	-	-

* Possible sample contamination/tampering based on hourly sequential data

Conclusion

The project area is situated within a region with already elevated ambient air pollution. Monitoring results at Impala indicate that dust fallout from the existing mining operations do not exceed the NDCR limits (apart from one exceedance at the Platinum Village which is believed to be a contaminated or tampered sample). The operations off-site dust fallout rates shown by the sampling complies with the NDCR as there were no exceedances of more than two times per year at a site or for consecutive months at a site. Management measures for current mining activities need to be complied with at all times to effectively manage operational contributions to ambient air concentrations and dust fallout.

Due to the nature of the proposed project, it is unlikely to result in any material changes to localised air impacts. Although Kanana, as a third-party receptor is located within close proximity to the project footprint, it must be noted that the emissions to air generated by the parking area expansion will be negligible, limited primarily to the construction phase and is not expected that impacts will be felt by the community members at Kanana.

7.4.1.9 Noise

Introduction

Mining activities and infrastructure have the potential to cause an increase in ambient noise levels in and around the proposed project area. This may cause a disturbance to nearby receptors. Land uses and potential receptor sites including residential areas surrounding the mine have been described in the land use section below. To understand the basis of these impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013).

Description

Day-time noise levels range from 43– 52 dBA, with an average of 48 dBA which does exceed the South African National Standards (SANS) day-time rating of 50 dBA. Night-time noise levels before 22h00 range from 42 – 46 dBA with an average of 44 dBA and therefore does not exceed the SANS day/night-time rating of 50 dBA. Night-time noise levels (after 22h00) fall even lower to a range of between 37 - 40 dBA which is below the SANS night-time threshold of 40dBA.

Conclusion

Areas that are located in close proximity to mining activities have elevated ambient noise levels. Given that the project footprint is located adjacent to the Shaft 16 Complex, the noise environment has already been altered and as such. Due to the nature of the proposed project, it is unlikely to result in any material changes to noise impacts. Although Kanana, as a third-party receptor is located within close proximity to the project footprint, it must be noted that the noise generated by the parking area expansion will be negligible, limited primarily to the construction phase and is not expected that impacts will be felt by the community members at Kanana.

7.4.1.10 Visual

Introduction

Mining infrastructure has the potential to alter the landscape character at the proposed project area and surrounding area through the establishment of both temporary and permanent infrastructure. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013), the BAR and EMPr for the Flash Dryer Project (SLR, 2021) and the Landscape/Visual Site Sensitivity Verification Report (SSVR) for the Parking Area Expansion (SLR, 2021).

Description

Landscape Character: The landscape character of the Impala MR area is defined by gentle undulating plains, koppies, communities and mining infrastructure. The project area is characterised as fairly flat in terms of topography, vegetated by low grasses. The project footprint is currently vacant; however, an overhead transmission line traverses the area, and a stormwater culvert is located to the west of the site. The project footprint is located adjacent to Impala's Shaft 16 Complex and has been significantly disturbed as a result of historic cultivation activities.

Scenic Quality: The scenic quality is linked to the type of landscapes that occur within an area. Scenic quality ranges from high to low as follows:

- High – these include the mountains and koppies, water bodies such as farm and irrigation dams, and natural drainage systems;
- Moderate – these include agricultural activities and recreational areas; and
- Low – these include towns, communities, roads, railway line, industries and existing mines.

When these landscape types are considered as a whole, the scenic quality in the central, southern and western areas of the Impala MR area can be characterised as moderate to low, due to existing mining and community infrastructure. Resources that are considered to have a high scenic value are isolated koppies to the east and areas that have not been disturbed by any mining or community activities to the east and north. Given the presence of the existing Shaft 16 Complex, the overhead transmission line, various access roads, the stormwater culvert and the Kanana residential area all within the vicinity of the project area, the scenic value at the project footprint can be considered to be low.

Sense of Place: The sense of place results from the combined influence of landscape diversity and distinctive features. Given the dominance of the mining and community infrastructure, and the lack of landscape diversity and distinctiveness, the overall sense of place for the central, southern and western areas of the Impala MR area is considered to be low. A moderate value is placed on the plains to the north of the Impala MR Area because while the area is relatively undisturbed, it is a fairly common landscape with limited diversity. A high value is placed on the hills and koppies in the east of the Impala MR area because this landscape contains a complex and coherent special dimension with both diversity and distinctiveness. Given the dominance of the mining, community and civil infrastructure, and the lack of landscape diversity and distinctiveness, the overall sense of place for the project footprint is moderate to low.

Visual Receptors: When viewed from the perspective of tourists and community members, mining activities could be associated with a sense of disenchantment. People who benefit from Impala (employees, contractors, service providers etc.) may not experience this disenchantment but rather see the mine with a sense of excitement and anticipation. It follows that the sensitive viewer locations are those situated within the vicinity of undisturbed natural areas or on surrounding transport routes (particularly those that are used to reach tourist destinations). Visual receptor locations and routes that are less sensitive, but that are still visual receptors to the visual intrusion of the proposed project, include the Kanana residential area located to the east, and the two access roads bordering the project footprint that are used to gain access to Impala's Shaft 16 Complex.

Conclusion

When considering landscape character, scenic quality, sense of place and visual receptors the baseline conclusion is that the project footprint is located in an area which has already been disturbed by mining and historic agricultural activities. It follows that the visual value of the project area has already been influenced.

7.4.2 Baseline Cultural/Heritage Environment Affected by the Proposed Activity

7.4.2.1 Cultural/Heritage and Palaeontology

Introduction

Cultural/heritage resources include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

Paleontological resources are fossils, the remains or traces of prehistoric life preserved in the geological (rock stratigraphic) record. They range from the well-known and well-publicised (such as dinosaur and mammoth bones) to the more obscure but nevertheless scientifically important fossils (such as palaeobotanical remains, trace fossils, and microfossils). Paleontological resources include the casts or impressions of ancient animals and plants, their trace remains (e.g., burrows and trackways), microfossils (e.g., fossil pollen, ostracodes, and diatoms), and unmineralised remains (e.g., bones of Ice Age mammals).

Mining activities and mining-related infrastructure have the potential to impact heritage/cultural and paleontological resources through the placement of infrastructure and through the related construction

and operational activities. To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013), the BAR and EMPr for the Flash Dryer Project (SLR, 2021), the Phase I HIA for the Parking Area Expansion (Pistorius, J., 2021) and the Request for Exemption Letter for the Parking Area Expansion (University of Witwatersrand, 2021).

Description

Cultural/Heritage: Impala's MR area is situated in the Central Bankenveld of the North West province. The Bankenveld is a narrow strip of land between the Northern Bushveld Savannah and the centrally situated Highveld. The Bankenveld as a whole has a rich archaeological heritage dating from the prehistoric and historic (or colonial) periods, which form a record of cultural heritage of most groups living in South Africa. Heritage sites identified within the Impala MR Area include stone age sites, late iron age sites and historical settlements, houses, graveyards and other features. Following a field assessment undertaken by Dr. Julius Pistorius on 5 May 2021, no cultural/heritage materials of significance were identified within or in close proximity to the project footprint.

Palaeontology: The Impala MR area is located on Pyramid Gabbro Norite, an intrusive igneous rock type. These rocks are approximately 2 200 – 2 050 million years old and are enriched with the PGM resources that Impala mines as part of their operations. This underlying geology forms part of the Main Zone of the RLS of the BIC (refer to Section 7.4.1.1). Palaeontological resources are not associated with this underlying geology as they are not capable of preserving fossils.

Conclusion

The project footprint is situated within the Central Bankenveld region of the North West province. The Bankenveld is rich in archaeological resources; however, no cultural/heritage resources of significance have been identified within the project footprint. Furthermore, the project footprint is located on the RLS of the BIC with no palaeontological resources associated with this underlying geology. Notwithstanding the above, the potential exists for resources to be buried beneath the surface of the ground and chance finds during the construction phase would need to be managed accordingly.

7.4.3 Baseline Socio-Economic Environment Affected by the Proposed Activity

7.4.3.1 Socio-Economic

Introduction

Mining operations have the potential to result in both positive and negative socio-economic impacts. The positive impacts are usually economic in nature with mines contributing directly towards employment, procurement, skills development and taxes on a national, regional and local scale. In addition, mines indirectly contribute to economic growth in the national, regional and local economies by strengthening the national economy and by increasing the number of income-earning people. This has a multiplying effect on the trade of other goods and services in other sectors.

The negative impacts associated with mining operations can be both social and economic in nature. In this regard, mines can cause:

- An influx of people seeking job opportunities which can lead to increased pressure on basic infrastructure and services (housing, health, sanitation and education), informal settlement development, increased trespassing, increased crime, introduction of diseases and disruption to the existing social structures within communities; and
- A change to not only pre-existing land uses, but also the associated social structure and meaning associated with these land uses and way of life. This is particularly relevant in the closure phase when the economic support provided by mines ends, the natural resources that were available to the pre-mining society are reduced, and the social structure that has been transformed to deal with the threats and opportunities associated with mining finds it difficult to adapt.

To understand the basis of these potential impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the BAR and EMPr for the Flash Dryer Project (SLR, 2021) and the Community Survey (Statistics South Africa (StatsSA), 2016).

Description

The socio-economic environment on a provincial, district and municipal level are summarised in Table 7-8.

Table 7-8: Socio-Economic Environment of the Province and District and Local Municipalities

Category and Indicator	North West Province	BPDM	RLM
Demographics			
Municipality Size	105 238.1 km ²	18 489.5 km ²	3 422.8 km ²
Population Size	3 748 435	1 657 149	626 522
Population Density	35.6 per km ²	89.6 per km ²	183 per km ²
Age	<ul style="list-style-type: none"> 0 - 29 years (57%) 30-59 years (34%) 60 years and older (9%) 	<ul style="list-style-type: none"> 0 - 29 years (55%) 30-59 years (37%) 60 years and older (8%) 	<ul style="list-style-type: none"> 0 - 29 years (54%) 30-59 years (40%) 60 years and older (6%)
Gender	<ul style="list-style-type: none"> Female (49%) Male (51%) 	<ul style="list-style-type: none"> Female (47%) Male (53%) 	<ul style="list-style-type: none"> Female (45%) Male (55%)
Race	<ul style="list-style-type: none"> Black African (92%) White (6%) Coloured (2%) 	<ul style="list-style-type: none"> Black African (94%) White (5%) Coloured (1%) 	<ul style="list-style-type: none"> Black African (93%) White (6%) Coloured (1%)
Language	<ul style="list-style-type: none"> Setswana (70%) Afrikaans (7%) Sesotho (6%) IsiXhosa (5%) Xitsonga (3%) Others (9%) 	<ul style="list-style-type: none"> Setswana (65%) Xitsonga (6%) IsiXhosa (5%) Afrikaans (5%) Sesotho (4%) Sepedi (4%) Others (11%) 	<ul style="list-style-type: none"> Setswana (64%) IsiXhosa (10%) Afrikaans (6%) Sesotho (5%) Xitsonga (5%) Others (10%)
Migration	<ul style="list-style-type: none"> South African (97%) <ul style="list-style-type: none"> North West (81%) Gauteng (5%) Limpopo (3%) Free State (2%) Eastern Cape (2%) Others and outside of South Africa (5%) 	<ul style="list-style-type: none"> South African (94%) <ul style="list-style-type: none"> North West (72%) Gauteng (9%) Limpopo (5%) Eastern Cape (4%) Mpumalanga (2%) Others and outside of South Africa (8%) 	<ul style="list-style-type: none"> South African (92%) <ul style="list-style-type: none"> North West (73%) Others and outside of South Africa (10%) Eastern Cape (8%) Gauteng (4%) Limpopo (3%) Free State (2%)
Households			
Household Number	1 248 765	611 145	262 576
Household Type	<ul style="list-style-type: none"> Formal houses (67%) Shacks (18%) Flats in backyards (8%) Others (5%) Traditional dwellings (2%) 	<ul style="list-style-type: none"> Formal houses (58%) Shacks (27%) Flats in backyards (10%) Others (5%) 	<ul style="list-style-type: none"> Formal houses (51%) Shacks (29%) Flats in backyards (14%) Others (6%)
Service Delivery			
Water	<ul style="list-style-type: none"> Piped water inside house or yard (63%) Others (18%) Community stand (10%) Communal tap (9%) 	<ul style="list-style-type: none"> Piped water inside house or yard (66%) Others (22%) Community stand (6%) Communal tap (6%) 	<ul style="list-style-type: none"> Piped water inside house or yard (86%) Others (5%) Community stand (5%) Communal tap (4%)
Electricity	<ul style="list-style-type: none"> Pre-paid or conventional meters (91%) 	<ul style="list-style-type: none"> Pre-paid or conventional meters (90%) 	<ul style="list-style-type: none"> Pre-paid or conventional meters (85%)

Category and Indicator	North West Province	BPDM	RLM
	<ul style="list-style-type: none"> No access (7%) Unmetered (unpaid) (2%) 	<ul style="list-style-type: none"> No access (8%) Unmetered (unpaid) (2%) 	<ul style="list-style-type: none"> No access (11%) Unmetered (unpaid) (3%) Other (1%)
Toilets	<ul style="list-style-type: none"> Flush toilet (47%) Pit toilet (47%) Other (3%) No access (3%) 	<ul style="list-style-type: none"> Flush toilet (38%) Pit toilet (56%) Other (4%) No access (2%) 	<ul style="list-style-type: none"> Flush toilet (60%) Pit toilet (36%) Other (1%) No access (2%)
Refuse	<ul style="list-style-type: none"> Regular service provider (55%) Own dump (34%) Other (5%) Irregular service provider (3%) None (3%) 	<ul style="list-style-type: none"> Regular service provider (59%) Own dump (27%) Other (6%) Irregular service provider (5%) None (3%) 	<ul style="list-style-type: none"> Regular service provider (73%) Own dump (12%) Other (6%) Irregular service provider (5%) None (4%)
Economics			
Employment	<ul style="list-style-type: none"> Employed (37%) Other not economically active (40%) Unemployed (17%) Discouraged work seeker (6%) 	<ul style="list-style-type: none"> Employed (42%) Other not economically active (35%) Unemployed (19%) Discouraged work seeker (4%) 	<ul style="list-style-type: none"> Employed (49%) Other not economically active (30%) Unemployed (18%) Discouraged work seeker (3%)
Sector of employment	<ul style="list-style-type: none"> Formal (68%) Informal (15%) Private household (15%) Unsure (2%) 	<ul style="list-style-type: none"> Formal (71%) Informal (14%) Private household (13%) Unsure (2%) 	<ul style="list-style-type: none"> Formal (75%) Private household (12%) Informal (11%) Unsure (2%)
Annual Income	<ul style="list-style-type: none"> Average – R30 000 <ul style="list-style-type: none"> R0 – R20 000 (38%) R20 0001 – R150 000 (48%) R150 001 – R600 000 (8%) R600 001 and above (1%) Unspecified (4%) 	<ul style="list-style-type: none"> Average – R30 000 <ul style="list-style-type: none"> R0 – R20 000 (34%) R20 0001 – R150 000 (55%) R150 001 – R600 000 (8%) R600 001 and above (1%) Unspecified (2%) 	<ul style="list-style-type: none"> Average – R57 500 <ul style="list-style-type: none"> R0 – R20 000 (25%) R20 0001 – R150 000 (58%) R150 001 – R600 000 (11%) R600 001 and above (1%) Unspecified (5%)
Education			
Education Level	<ul style="list-style-type: none"> None (9%) Primary (or some) (18%) Matric (or some secondary) (66%) Tertiary (5%) Unspecified (2%) 	<ul style="list-style-type: none"> None (6%) Primary (or some) (16%) Matric (or some secondary) (71%) Tertiary (4%) Unspecified (3%) 	<ul style="list-style-type: none"> None (5%) Primary (or some) (15%) Matric (or some secondary) (72%) Tertiary (5%) Unspecified (3%)

Conclusion

The socio-economic environment descriptions for the province and district and local municipalities indicate that in the communities surrounding Impala's operations, there are significant social and economic challenges. The existing situation indicates that there is a measure of unemployment and informal settlement development, with limited inward migration of people with the resultant pressure on basic infrastructure and services (education, sanitation, water etc.). Whilst the proposed project may contribute (cumulatively) to the social and economic challenges described above, due to the nature, scale and limited extent of the proposed project, it is expected that the associated negative socio-economic impact will be negligible. The proposed expansion of the parking area will contribute and allow for the creation of short-term employment and procurement opportunities. However, similarly to the afore-mentioned negative impacts, this positive impact will be negligible due to the limited nature, scale and extent of the proposed project.

7.4.3.2 Land Use

Introduction

Mining activities have the potential to affect land uses both within the mine area and in the surrounding areas. This can be caused by physical land transformation and through direct or secondary impacts. The key related potential environmental impacts are water, air and noise pollution, visual impacts and the influx of job seekers with related social ills. To understand the basis of the potential land use impacts, a baseline situational analysis is described below.

Data Sources

Information in this section was sourced from the EIA and EMPr for the Shaft 16 WRD Expansion (SLR, 2013), the BAR and EMPr for the Flash Dryer Project (SLR, 2021), site observations, Windeed searches and a review of topographical maps and satellite imagery.

Description

Mining and Prospecting Rights: The extent of Impala's current mining and prospecting rights are listed in Appendix E. Mining rights associated with the property on which the proposed project is located are provided in Table 7-9.

Table 7-9: Impala's Mining Rights within Project Area

Property Description	Portion number	Mining/Prospecting Rights
Reinkoyalskraal 278 JQ	Whole farm	MR held by Impala – reference NW30/5/1/2/2/131MR

Land Ownership: Impala's MR area is an area of land that Impala may utilise for mining activities. Impala does not own any land within this area. The MR area is made up of surface lease agreements with the RBA/RBN. Land ownership details on which the proposed project is located are provided in Table 7-10.

Table 7-10: Land Ownership within Project Area

Property Name	Portion Number	Title Deed Reference	Registered Property Owner
Reinkoyalskraal 278 JQ	3	T373/1992BP	Bafokeng Tribe

Land Claims: The DRDLR Land Claims Commissioner of the North West was contacted to confirm if any land claims were lodged on the proposed project area (portion 3 of the farm Reinkoyalskraal 278 JQ). The Land Claims Commissioner confirmed that no land claims have been lodged (see Appendix C).

Land Use: Land use within the Impala MR Area is a mixture of agriculture, residential, mining activities and wilderness. Regional and local land use maps are provided in Figure 7-8 and Figure 7-9, respectively. The land on which the project footprint is located is currently vacant but was used historically for cultivation. More detail is provided below.

- **Agriculture:** Agricultural activities currently undertaken within Impala's MR area include firewood harvesting, crop harvesting (this includes dry land sunflowers and maize) and grazing for livestock. Any crop cultivation is mainly on a subsistence basis and is limited to areas that have not been occupied by mining-related infrastructure and surrounding communities. Farmers in the area rely on rain to water their crops and experience losses when summer rains are late or insufficient. As mentioned previously, historic cultivation activities are associated with the proposed project area; however, no farming activities have been undertaken here for at least 15 years.
- **Residential:** Numerous communities are located within the Impala MR area. Kanana is the closest community to the project footprint, which lies approximately 100 m eastwards. Residential areas located within a 10 km radius of the project area are listed as follows:
 - Freedom Park, approximately 4.5 km west;
 - Mafika, approximately 2.5 km north;
 - Serutube, approximately 4 km north;
 - Lesung, approximately 9 km north-east;
 - Mosonthal-Marubitsi. Approximately 6.5 km north-east;
 - Mmatshetshela, approximately 6 km east;
 - Lekojaneng, approximately 10km east;
 - Boitekong, approximately 8.5 km south; and
 - Chachalaza, approximately 3 km south.
- **Infrastructure and Servitudes:** Impala has an extensive network of railway lines, water pipelines and power and telephone lines. Railway lines located within the MR area form part of Impala's internal railway network. This network is extensive and comprises over 100 km of rail which is utilised for the transportation of mining product. There are numerous pipelines within the MR area that transport compressed air, clean water, sewage, treated sewage effluent, process water, and slurry (amongst other substances). These pipelines are either located above ground or underground and are maintained by Impala, except for the Rand Water pipeline feeding the main Rand Water reservoir at the UG2 Concentrator. Power lines located within the MR area comprise internal Impala power lines, municipal power lines and regional Eskom power lines. In addition to this, there are numerous telephone lines within the MR area that are maintained by Telkom. The underground Magalies water pipeline is located in close proximity to the project footprint. An overhead powerline traverses the project footprint and a stormwater culvert is located to the west of the site. A pedestrian walkway, recently built by Impala, is also located south of the site. The location of these infrastructural components has influenced the design and configuration of the proposed parking area.