



Glencore Operations South Africa (Pty) Ltd

Waterval Mine

Draft Scoping Report

August 2022

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Project Ref: 151-002

Prepared by: Suzanne van Rooy



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VERSION CONTROL	
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Approved by:	<u>Alta van Dyk</u>
Signed:	
Position:	Environmental Specialist
Date:	August 2022



DRAFT SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT ACTIVITIES

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

NAME OF APPLICANT: Glencore Operations South Africa (Pty) Ltd: Waterval Mine

PROJECT: UG1 Opencast project

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DMRE Reference No: **NW30/5/1/2/2/157 MR**
NW30/5/1/2/2/244 MR
NW30/5/1/2/2/246 MR
NW30/5/1/2/2/192 MR
NW30/5/1/2/2/260 MR

Section 102 Application Reference:
NW-00274-MR/102

IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE SCOPING REPORT

- 1) The objective of the scoping process is to, through a consultative process-
 - (i) identify the relevant policies and legislation relevant to the activity
 - (ii) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location
 - (iii) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
 - (iv) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic and cultural aspects of the environment;
 - (v) identify the key issues to be addressed in the assessment phase;
 - (vi) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
 - (vii) 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.

Executive Summary

Introduction

Glencore Operations South Africa (Pty) Ltd (Glencore) is involved in the mining of Chrome and Platinum Group Metals (PGMs). The company was previously known as Xstrata Alloys prior to the merger of Glencore International plc and Xstrata plc in May 2013.

Glencore Waterval Mine (Waterval Mine) is an existing mining operation situated approximately 3 km east of Rustenburg in the North West Province on various portions and holdings of the farm Waterval 306 JQ. The primary mineral mined is chromite. The mineral deposit is developed to the east of the town Rustenburg with the ore body that dips towards the north and strikes east-west.

Shangoni Management Services (Pty) Ltd (Shangoni) was appointed by Glencore to facilitate the updating and consolidation of the Waterval Mine's Environmental Impact Assessment Report (EIAR) and Environmental Management Programme Report (EMPr). This Consolidated EIAR and EMPr intended on superseding all prior EMPrs previously compiled and approved for the mine and served the purpose of incorporating and consolidating all approved activities at the mine up to February 2021 (collectively termed the Consolidated EMPr).

The EMPr Consolidation (2021) was approved as an addendum by the Department of Mineral Resources and Energy (DMRE) on 6 December 2021. It is the intention of Waterval Mine to amend the 2021 Consolidated EMPr to include the following activities:

- Include prospecting right 2060PR into the mining right area; and
- UG1 opencast project.

Waterval Mine appointed Alta van Dyk Environmental Consultants cc (AVDE) as the independent Environmental Assessment Practitioner (EAP) for this project to undertake the environmental-related authorisations and associated public participation process.

Project Description

The proposed UG1 opencast project will include the opencast mining of the chromite layer on the remaining extent of portion 82 of the farm Waterval 306 JQ. There is possible 3 million tons of the UG1 chromite layer that can potentially be mined using opencast mining methods.

Several new infrastructure will be constructed in support of the opencast project. The following buildings and amenities will be constructed for the UG1 opencast project:

- Roads, powerlines and pipelines;
- Fencing;
- Site offices and change houses;
- Stockpiles (topsoil, overburden and Run of Mine);
- General and hazardous waste management areas; and
- Water pollution management facilities.

The project will take place in three phases: The proposed schedule for the phases is as follows:

- Construction Phase ≈ Two months
- Operation Phase ≈ 3 years
- Decommissioning and Closure Phase ≈ 6 – 12 months

Authorisation Requirements

Before Waterval Mine may commence with the development of the proposed UG1 opencast project, the following environmental authorisations are required:

- A Scoping and Environmental Impact Reporting (S&EIR) process in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) and the Environmental Impact Assessment (EIA) Regulations (2014, as amended). The competent authority for this process is the North West Department of Minerals and Energy (DMRE).
- Approval in terms of the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA) (combined application in terms of NEMA and NEM:WA to be submitted to the DMRE).
- A Water Use Licence Application (WULA) in terms of the National Water Act (Act 36 of 1998). The competent authority for this process is the Department of Water and Sanitation (DWS).

Anticipated Specialist Studies

A number of specialist studies are being undertaken in support of the environmental authorisation application. These studies will establish the status quo of the current environment, identify possible impacts from the proposed project as well as provide suitable mitigation measures to manage the potential impacts. The following specialist studies will be undertaken:

- Terrestrial Biodiversity Assessment
- Wetland Assessment
- Surface Water Assessment
- Groundwater Assessment
- Air Quality Assessment
- Heritage Assessment
- Blasting Assessment
- Noise Assessment
- Visual Impact Assessment
- Mine Closure Plan and Financial Provision

Stakeholder Engagement

During the Scoping Phase, the following stakeholder engagement activities were undertaken:

- Updating the existing stakeholder database by identifying competent authorities, adjacent landowners and businesses in close proximity to the proposed opencast project;
- Project announcement:
 - Placing of site notices around the proposed opencast project area;
 - Placing an advertisement in the Rustenburg Herald;
 - Distribution of a Background Information Document to identified stakeholders;
- Making the Draft Scoping Report (this report) available for public comment for a period of 30 days (2 September to 3 October 2022);
- Inviting stakeholders to register as Interested and Affected Parties (I&APs) and requesting comments on the proposed project and Draft Scoping Report; and
- Public Open Day.

Comments raised by stakeholders during the Scoping Phase will be captured in the Comment and Response Table to be updated in the Final Scoping Report to be submitted to the DMRE.

Conclusion

This Draft Scoping Report sets out the proposed scope of the EIA that will be undertaken for the Waterval Mine's Consolidated EMPr amendment to include the proposed UG1 opencast project, and to include prospecting right 2060PR into the current Waterval mining right area. This Draft Scoping Report includes the alternatives assessed, project description, the key environmental impacts and issues that need to be addressed, as well as the specialist studies that will be undertaken and the qualifications and experience of the study team.

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Abbreviations

AVDE	Alta van Dyk Environmental Consultants
BID	Background Information Document
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme Report
Glencore	Glencore Operations (Pty) Ltd
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
LOM	Life of Mine
MHSA	Mine Health and Safety Act
MPRDA	Mineral and Petroleum Resources Development Act
NEM:AQA	National Environmental Management: Air Quality Act
NEM:BA	National Environmental Management: Biodiversity Act
NEM:PAA	National Environmental Management: Protected Areas Act
NEM:WA	National Environmental Management: Waste Act
NEMA	National Environmental Management Act
NFA	National Forestry Act
NHRA	National Heritage Resources Act
NWA	National Water Act
PGMs	Platinum Group Metals
RLM	Rustenburg Local Municipality
S&EIR	Scoping and Environmental Impact Reporting
SACNASP	South African Council for Natural Science Professions
SLP	Social and Labour Plan
WULA	Water Use Licence Application

1 Introduction and scope of report

1.1 Introduction

Glencore Operations South Africa (Pty) Ltd (Glencore) is involved in the mining of Chrome and Platinum Group Metals (PGMs). The company was known as Xstrata Alloys prior to the merger of Glencore International plc and Xstrata plc in May 2013.

Waterval Mine is an existing mining operation situated approximately 3 km east of Rustenburg in the North West Province on various portions and holdings of the farm Waterval 306 JQ. The primary mineral mined is chromite (with general formula $(Mg, Fe^{2+})(Cr, Al, Fe^{3+})_2O_4$). The mineral deposit is developed to the east of the town Rustenburg with the ore body that dips towards the north and strikes east-west. The main target for the mining at Waterval Mine is the LG6 Chromitite Package. The package consists of the LG6A Chromitite Layer which is separated from the LG6 Chromitite Layer by the LG6 Pyroxenite Middling (Shangoni, 2021).

Shangoni Management Services (Pty) Ltd (Shangoni) was appointed by Glencore to facilitate the updating and consolidation of the Waterval Mine's Environmental Impact Assessment (EIA) and Environmental Management Programme Report (EMPr). This Consolidated EIA and EMPr intended on superseding all prior EMPrs previously compiled and approved for the mine and served the purpose of incorporating and consolidating all approved activities at the mine up to February 2021 (collectively termed the Consolidated EMPr).

The following reasons resulted in a decision to amend and consolidate the Waterval Mine EMPr (Shangoni, 2021):

- Consolidated the following approved EMPrs into one EMPr:
 - Environmental Management Programme report for the Xstrata Waterval Chrome Mine, dated July 2009 and compiled by CHEMC environmental;
 - Environmental Impact Assessment and Environmental Management Programme, Waterval PGM plant EMPr, dated 2011 and compiled by Environmental and Energy Services; and
 - Waterval Mine has recently obtain a new section of mining right (Section 11 consent, in terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) ("MPRDA") from the adjacent Samancor Chrome: WCM Millsell – Waterkloof operation).
- More up-to-date information is available on the various environmental aspects in the form of specialist studies and monitoring data for inclusion into the EMPr;
- Various new environmental legislative publications have occurred since the previous EMPr and EMPr addendum, dated 2009 and 2011, respectively were approved; and
- Practical Management and Mitigation Measures, in compliance with the latest environmental legislation needed to be incorporated into the EMPr.

The EMPr Consolidation (2021) was approved as an addendum by the Department of Mineral Resources and Energy (DMRE) on 6 December 2021. It is the intention of Waterval Mine to amend the 2021 Consolidated EMPr to include the following activities:

- Include prospecting right 2060PR into the mining right area – an application in terms of S102 was already lodged in 2020 – DMRE Reference Number – NW-00274-MR/102.; and
- UG1 opencast project.

1.2 Authorisations required

Before Waterval Mine may commence with the development of the proposed UG1 opencast project, the following environmental authorisations are required:

- A Scoping and Environmental Impact Reporting (S&EIR) process in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) and the EIA Regulations (2014, as amended). The competent authority for this process is the North West DMRE.
- Approval in terms of the National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA) (combined application in terms of NEMA and NEM:WA to be submitted to the DMRE).
- A Water Use Licence Application (WULA) in terms of the National Water Act (Act 36 of 1998). The competent authority for this process is the Department of Water and Sanitation (DWS).

Alta van Dyk Environmental Consultants cc (AVDE) has been appointed as the independent Environmental Assessment Practitioner (EAP) for this project to undertake the environmental-related authorisations and associated public participation process.

The S&EIR process is illustrated in Figure 1:1.



Scoping and Environmental Impact Reporting Process

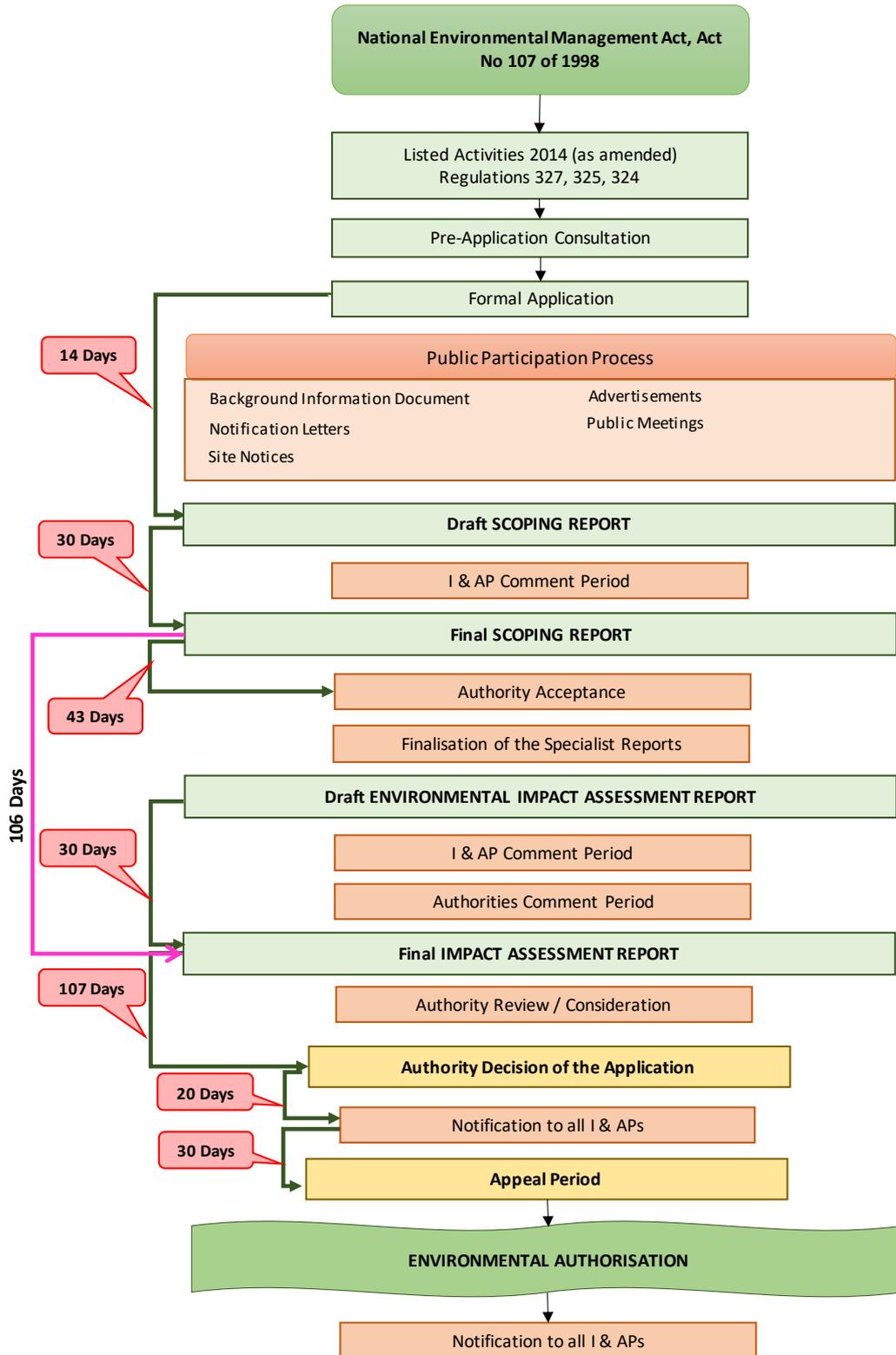


Figure 1:1 Scoping and Environmental Impact Reporting process

1.3 Structure of the report

The Draft Scoping Report has been compiled in accordance with the requirements of Government Notice R982 dated 4 December 2014 (as amended), Section 2 of Appendix 2. These requirements and the sections of this Draft Scoping Report in which they are addressed, are summarised in Table 1:1.

Table 1:1 Structure of the Draft Scoping Report

No	Description	Reference
2 (1)	A scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include-	
a)	details of-	
	(i) the EAP who prepared the report; and	Section 2.2
	(ii) the expertise of the EAP, including a curriculum vitae;	Section 2.2 Appendix A
b)	The location of the activity, including:	Section 3.2
	(i) the 21-digit Surveyor General code of each cadastral land parcel	Table 3:4
	(ii) where available, the physical address and farm name;	Table 3:4
	(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties.	N/A
c)	A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale, or if it is-	Figure 4:1 Figure 4:2 Figure 4:3 Figure 4:5 Figure 5:1
	(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken	N/A
	(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken	N/A
d)	A description of the scope of the proposed activity, including:	
	(i) All listed and specified activities triggered;	Table 5:2
	(ii) A description of the activities to be undertaken, including associated structures and infrastructure;	Section 5.2
e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and are to be considered in the assessment process;	Section 6
f)	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;	Section 7
g)	A full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including-	
	(i) Details of all the alternatives considered;	Section 10
	(ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Section 11
	(iii) 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;	Table 11:2

No	Description	Reference
	(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 12
	(v) The impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts- (aa) Can be reversed; (bb) May cause irreplaceable loss of resource; and (cc) Can be avoided, managed or mitigated;	Section 16
	(vi) the methodology used identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Section 17:1
	(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Section 17:2
	(viii) The possible mitigation measures that could be applied and level of residual risk;	Section 17:3
	(ix) The outcome of the site selection matrix	Section 17:4
	(x) If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	N/A
	(xi) A concluding statement indicating the preferred alternatives, including preferred location of the activity	Section 17:6
h)	A plan of study for undertaking the environmental impact assessment process to be undertaken, including:	Section 18
	(i) A description of the alternatives to be considered and assessed within the preferred site; including the option of not proceeding with the activity;	Section 10
	(ii) A description of the aspects to be assessed as part of the environmental impact assessment process;	Section 18:2
	(iii) Aspects to be assessed by specialists;	Section 18:3
	(iv) A description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists;	Section 18:4
	(v) A description of the proposed method assessing duration and significance;	Section 18:5
	(vi) An indication of the stages at which the competent authority will be consulted;	Section 19
	(vii) Particulars of the public participation process that will be conducted during the environmental impact assessment process; and	Section 20
	(viii) A description of the tasks that will be undertaken as part of the environmental impact assessment process;	Section 18
	(ix) Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	Table 21:1
i)	An undertaking under oath or affirmation by the EAP in relation to –	
	(i) The correctness of the information provided in the report;	Section 25
	(ii) The inclusion of comments and inputs from stakeholders and interested and affected parties;	
	(iii) 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	
j)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Section 26

No	Description	Reference
k)	Where applicable, any specific information required by the competent authority; and	N/A
l)	Any other matter required in terms of section 24(4)(a) and (b) of the Act.	N/A

2 Details of Project Applicant and Environmental Assessment Practitioner

2.1 Details of the project applicant

The applicant for this project is Glencore Operations South Africa (Pty) Ltd. The details of the applicant are shown in Table 2:1.

Table 2:1 Contact details of the applicant

Applicant	Glencore Operations South Africa (Pty) Ltd
Company Registration	1997/017998/07
Postal Address	PO Box 310, Kroondal, 0350
Responsible person	Annah Ngope
Telephone number	014 597 8163
Fax Number	014 597 8408
Email	Annah.Ngope@glencore.co.za

2.2 Details of the Environmental Assessment Practitioner who prepared the report

AVDE is appointed as the independent EAP to conduct the environmental authorisation for the proposed project.

AVDE assigned Suzanne van Rooy as the lead EAP to undertake the integrated environmental authorisation process. Details of the EAPs are provided in Table 2:2.

Table 2:2 Details of the EAP

EAP Name	Contact Number	Fax Number	Email
Suzanne van Rooy	012 940 9457	086 634 3967	suzanne@avde.co.za

2.2.1 Qualifications of the EAP

The qualifications and professional registrations held by the EAP are shown in Table 2:3. Refer to Appendix A for copies of the qualifications and Curriculum Vitae (CV) of the EAP.

Table 2:3 Qualifications of the EAP

EAP name	Qualifications	Professional registration
Suzanne van Rooy	MPhil Environmental Management (University of Stellenbosch)	Pr.Sci.Nat (Reg nr. 400378/11) EAPASA Registered EAP (Ref 2019/1079)

2.2.2 Summary of the EAP's past experience

Suzanne van Rooy holds a Master's Degree in Environmental Management from the University of Stellenbosch. In terms of professional affiliations, Suzanne is registered with the South African Council for Natural Science Professions (SACNASP - 400378/11) in Environmental Science field of practice. Suzanne's expertise is in the mining industry sector, focusing on Environmental Impact Assessments, Water Use Licence Applications, environmental performance assessments, water use licence audits, public participation and closure cost assessments. Her involvement in such projects varies from project management and co-ordination to the compilation and review of technical and environmental documents and reports. She has been involved in environmental authorisations for both underground and open cast mining operations, as well as the associated activities such as waste disposal facilities, conveyor routes, access roads, pollution control and other dams, undermining of wetlands and river crossings. She has also conducted various environmental feasibility reporting for potential mining projects.

Suzanne van Rooy meets the requirements for independence as she do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the EIA Regulations, 2017, and has no vested interest in the proposed activity proceeding, and also has no, and will not engage in, conflicting interests in the undertaking of the activity.

3 Description of the Property

3.1 Waterval Mine mining rights

Table 3:1 below provides more detail with regards to the various mining rights granted to Waterval Mine and the farm portions associated therewith. Table 3:2 provides information on the surface rights and title deeds of the relevant farm portions (Shangoni, 2021). **It is the intension of Waterval Mine to include PR2060 into their current mining right area.** The Waterval Mine mining right areas are indicated in

Figure 4:2.

Table 3:1 Waterval Mine approved mining rights issued by the Department of Mineral Resources (Shangoni, 2020)

Mining Right	Description of Mining Right	Farm portions included in Mining Right
Converted Mining Right: File No's: <ul style="list-style-type: none"> • NW30/5/1/2/2/157 MR • NW30/5/1/2/2/244 MR • NW30/5/1/2/2/246 MR 20 February 2007	Conversion of old order Mining Right: Converted in terms of Item 7 of Schedule II of MPRDA.	Portions 45 and 97 of the farm Rustenburg Town and Townlands 272 JQ and Holdings 25 and 26, Portion 1 of Holding 27, Portions 27, 30, 31, 32, 34 (all portions of Portion 2) and Mineral area 1 on Remainder of Portion 2, and Portions 35, 36, 37, Mineral area 1, Holdings 21, 22, 23 and Remaining Extent of Holding 24, all of the farm Waterval 306 JQ.
Amendment / Variation of a Mining Right: File No's: <ul style="list-style-type: none"> • NW30/5/1/2/2/157 MR • NW30/5/1/2/2/244 MR • NW30/5/1/2/2/246 MR 22 December 2014	Amended / varied by the inclusion of Platinum Group Metals, Nickel ore, Copper ore, Cobalt ore, Iron ore and Silver ore (excluding Platinum Group Metals and Minerals mines out of necessity in the mining of platinum group metals found in the UG2 and Merensky Reefs; and Portions 7, 8 and 145 of the farm Rustenburg Town and Townlands 272 JQ, thereby extending the original mining rights area.	Portions 45 and 97 of the farm Rustenburg Town and Townlands 272 JQ and Holdings 25 and 26, Portion 1 of Holding 27, Portions 27, 30, 31, 32, 33, 34 (all portions of Portion 2) and Mineral area 1 on remainder of Portion 2, and Portions 35, 36, 37, Mineral area 1, Holdings 21, 22, 23 and Remaining extent of Holding 24, all of the farm Waterval 306 JQ.
Mining Right: File No: <ul style="list-style-type: none"> • NW30/5/1/2/2/260 MR 	Mining Right transferred to Waterval Mine in terms of Section 11 of MPRDA.	Portion 1(RE), Portion 3, Portion 7, Portion 8, Portion 9, Portion 10 (RE), Portion 11, Portion 12 of the Farm Waterval 307JQ. Portion RE of the farm Waterval 581JQ and a Portion of Portion 1 of the Farm Waterval 581JQ. A portion of Portion 53 (RE) of the Farm Waterkloof 305JQ.

Table 3:2 Surface rights owners and title deed numbers (Shangoni, 2021)

Farm portions	Title deed no	Property size	Surface rights owner
Portion 135 of the Farm Town and Townlands of Rustenburg 272 JQ	T15039/1976	1.0 ha	Republic of South Africa
Portion 136 of the Farm Town and Townlands of Rustenburg 272 JQ	T18494/1987	Unknown	Unknown
Portion 137 of the Farm Town and Townlands of Rustenburg 272 JQ	T40140/1979	1.8 ha	Republic of South Africa
Portion 138 of the Farm Town and Townlands of Rustenburg 272 JQ	T17253/1977	29.2608 ha	Provincial Government of the North-West Province
Portion 141 of the Farm Town and Townlands of Rustenburg 272 JQ	T28281/1981	0.44 ha	Municipality of Rustenburg
Portion 53 of the Farm Waterkloof 305 JQ	T15249/2003	16.3412 ha	SAMANCOR Chrome Ltd.
Portion 2 of the Farm Waterval 306 JQ	T2465/1961	2394182 ha	Rustenburg Platinum Mines Ltd.
Portion 27 of the Farm Waterval 306 JQ	T104380/2000	50.2310 ha	Glencore Operations South Africa (Pty) Ltd.
Portion 33 of the Farm Waterval 306 JQ	T152202/1999	9.4331 ha	Glencore Operations South Africa (Pty) Ltd.
Portion 34 of the Farm Waterval 306 JQ	T152202/1999	9.6324 ha	Glencore Operations South Africa (Pty) Ltd.
Portion 75 of the Farm Waterval 306 JQ	Unknown		
Portion 76 of the Farm Waterval 306 JQ	Unknown		
Portion 81 of the Farm Waterval 306 JQ	T60892/2003	12.5251 ha	Xvest Invc 2009 cc
Portion 82 of the Farm Waterval 306 JQ	T4731/2004	121.7951 ha	Glencore Operations South Africa (Pty) Ltd.
Portion 116 of the Farm Waterval 306 JQ	T83629/2013	1.5 ha	ADLU Projects cc
Portion 26 of the Farm Waterval SH 450 JQ	Unknown		
Portion 1 of the Farm Waterval 307 JQ	T74967/2014	12.5437 ha	Rustenburg Local Municipality
Portion 7 of the Farm Waterval 307 JQ	T39996/2013	9.6433 ha	Rustenburg Local Municipality
Portion 8 of the Farm Waterval 307 JQ	T74967/2014	9.3982 ha	Rustenburg Local Municipality
Portion 9 of the Farm Waterval 307 JQ	T74967/2014	6.9191 ha	Rustenburg Local Municipality

Farm portions	Title deed no	Property size	Surface rights owner
Portion 3 of the Farm Waterval 307 JQ	T39996/2013	27.4304 ha	Rustenburg Local Municipality
Portion 12 of the Farm Waterval 307 JQ	T112737/2003	4.4996 ha	Bouvest 2263 cc
Portion 10 of the Farm Waterval 307 JQ	T74967/2014	56.4776 ha	Rustenburg Local Municipality
Portion 11 of the Farm Waterval 307 JQ	T83347/2004	11.1500 ha	Rustenburg Platinum Mines Ltd

3.2 Description of the property

The location and property description in the approved Consolidated 2021 EMPr are provided in Table 3:3.

Table 3:3 Description of the properties applicable to Waterval Mine (Shangoni, 2021)

Farm name	Various portions and holdings of the farm Waterval 306 JQ, the Farm Rustenburg Town and Townlands 272JQ and Waterval 307 JQ.	
Application area (ha)	<ul style="list-style-type: none"> • 616.9699 hectares (as per existing approved mining rights 244MR 246MR 157 MR and 192MR) • 389.3787 hectares (as per additional mining right area 260MR) 	
Magisterial district	Bojanala District Municipality Rustenburg Local Municipality	
Distance and direction from nearest town	3 km east of Rustenburg in the North West Province	
21-digit Surveyor General code for each farm portion	TOJQ0000000027200135; TOJQ0000000027200137; TOJQ0000000027200141; TOJQ0000000030600002; TOJQ0000000030600022; TOJQ0000000030600075; TOJQ0000000030600081; TOJQ0000000045000026	TOJQ0000000027200136; TOJQ0000000027200138; TOJQ0000000030500053; TOJQ0000000030600027; TOJQ0000000030600034; TOJQ0000000030600076; TOJQ0000000030600116;

The property description for the proposed UG1 opencast project is provided in Table 3:4.

Table 3:4 Property description of proposed UG1 opencast project

Farm name	Portion 82 of Waterval 306 JQ
Application area (ha)	85 ha
Magisterial district	Bojanala District Municipality Rustenburg Local Municipality
Distance and direction from nearest town	3 km east of Rustenburg in the North West Province
21-digit Surveyor General code for each farm portion	TOJQ0000000030600082

The property description for inclusion of PR 2060 into the mining right areas is provided in Table 3:5.

Table 3:5 Property description of PR 2060

Farm name	Remaining portion of portion 1 of the farm Town and Townlands of Rustenburg 272 JQ
Application area (ha)	17.1988 hectares (as per prospecting right area to be added 2060PR – Applied for inclusion of this area in terms of S102 of the MPRDA – DMRE Reference Number NW-00274-MR/102.
Magisterial district	Bojanala District Municipality Rustenburg Local Municipality
Distance and direction from nearest town	3 km east of Rustenburg in the North West Province
21-digit Surveyor General code for each farm portion	T0JQ00000000027200001

4 Locality map

The following maps indicate the locality of Waterval Mine, its mining right areas and location of the proposed UG1 opencast project.

- Figure 4:1 Locality map of the Waterval Mine (Shangoni, 2021)
- Figure 4:2 Mining right areas for Waterval Mine
- Figure 4:3 Farm portions relevant to the Waterval Mine mining right area
- Figure 4:4 Locality map of proposed UG1 opencast project

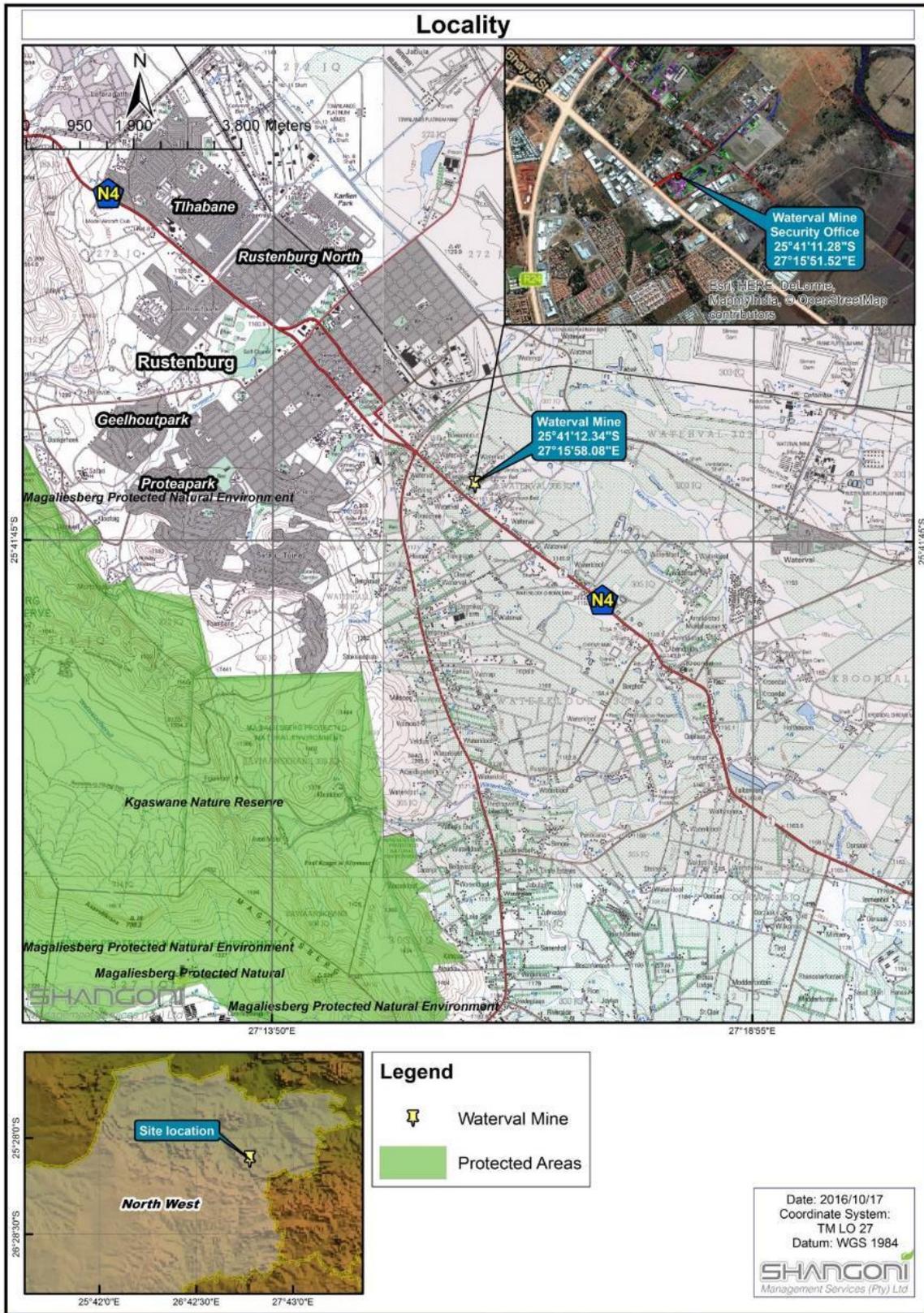
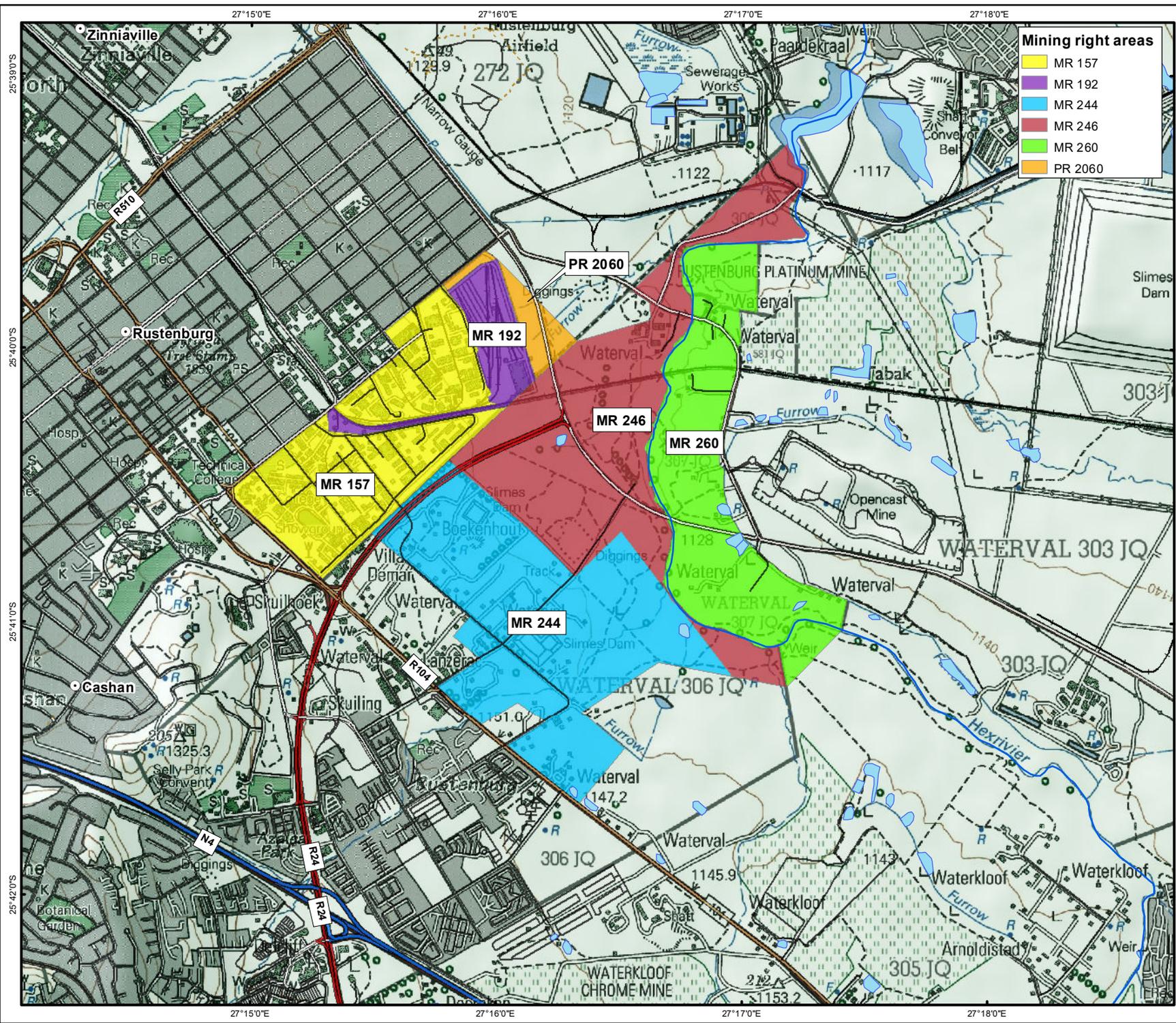


Figure 4:1 Locality map of the Waterval Mine (Shangoni, 2021)



Mining right areas

- MR 157
- MR 192
- MR 244
- MR 246
- MR 260
- PR 2060

Legend

- Towns
- Buildings/Ruins
- Motorway
- Primary Road
- Secondary Road
- Tertiary Road
- Street/Road
- Track
- Railway
- Contours
- Cadastral Farms
- Vlei
- Built up Areas
- Cultivated Lands
- Open Areas
- Water Bodies



SCALE: 1: 35 000

0 250 500 750 1000 1250

Meters

TITLE:

Figure 4:2 Mining right areas for Waterval Mine

CLIENT:

GLENCORE

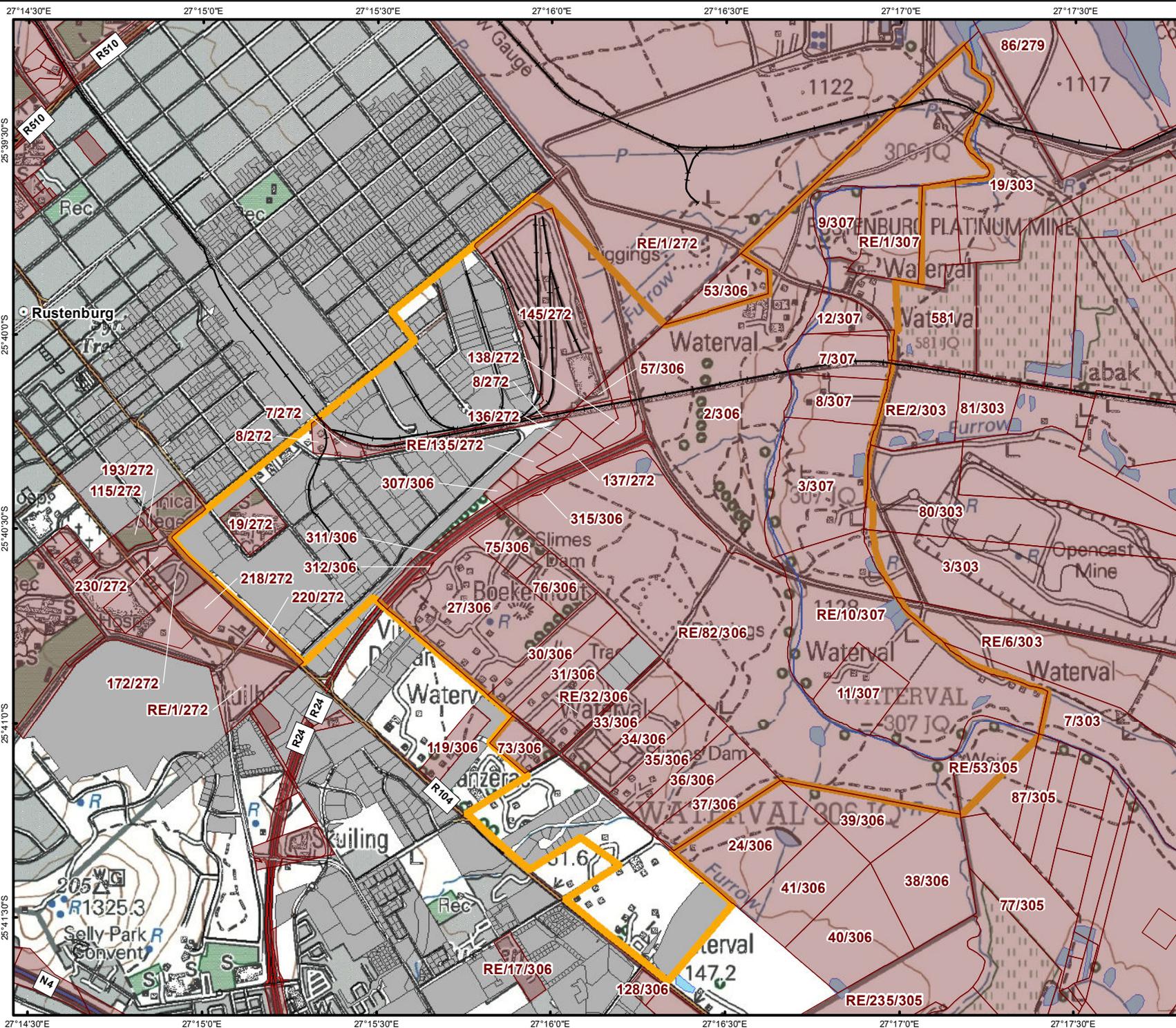
DATE: June 2022	PROJECT: WATerval_MINE
DRAWN: THURLOW MAPPING	APPROVED: SVR
MAP: Mining_Right_Areas_Rev1.mxd	REV: 0

Alta van Dyk Environmental Consultants cc (2011/059764/23)

VAT No: 4630259952
 Tel: 012 940 9457
 Fax: 086 634 3967
 Cell: 062 782 4005

Projection: Transverse Mercator CM: 27 Datum: WGS 84
 Source: Chief Directorate National Geo-Spatial Information, 2527CB_2010_ED5_NM_GEO.tif, 2527CA_2010_ED5_NM_GEO.tif
 DWA - NGA Geosites Inset: ESRI Data and Maps

SIZE: A4



- ### Legend
- Mining Right Areas
 - Farm Portions
 - Erven
 - Towns
 - Buildings/Ruins
 - Motorway
 - Primary Road
 - Secondary Road
 - Tertiary Road
 - Street/Road
 - Railway
 - Contours
 - Cultivated Lands
 - Open Areas
 - Water Bodies



TITLE:
Figure 4:3 Farm portions relevant to the Waterval Mine

CLIENT:
GLENCORE

DATE: June 2022 PROJECT: WATerval_MINE

DRAWN: THURLOW MAPPING APPROVED: SVR

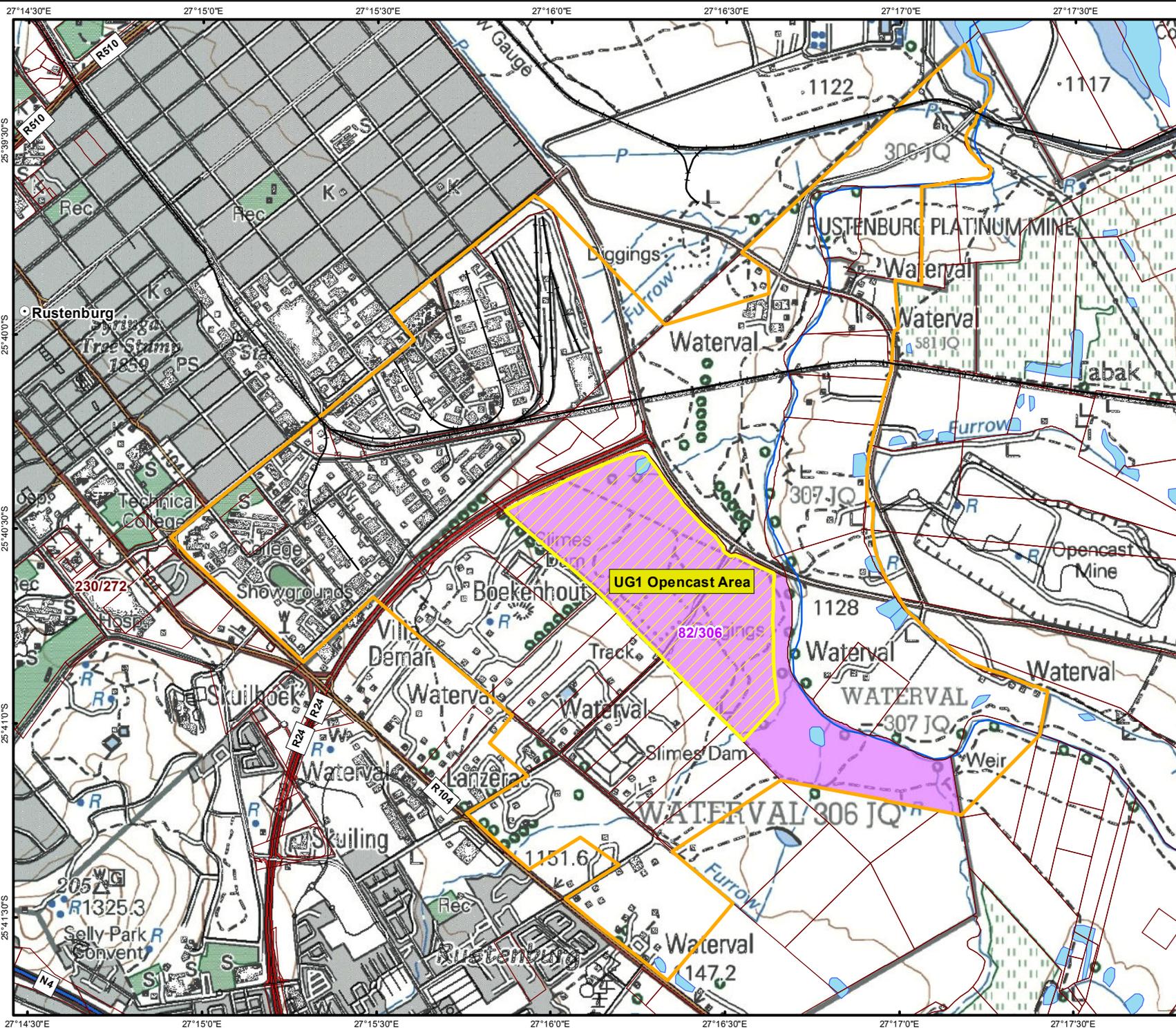
MAP: Farm_Portions_Rev1.mxd REV: 0

Alta van Dyk Environmental Consultants cc (2011/059764/23)
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 Tel: 012 940 9457
 Fax: 086 634 3967
 Cell: 082 782 4005

Projection: Transverse Mercator CM: 27 Datum: WGS 84
 Source: Cadastral Chief Surveyor-General, Department of Rural Development and Land Reform
 DWA - NGA Geosites Inset: ESRI Data and Maps

SIZE:
A4

Path: C:\GIS_PROJECTS_PVT\WAD_ENV\ROI\WATerval_MINEMAPPING\MXD\Farm_Portions_Rev1.mxd



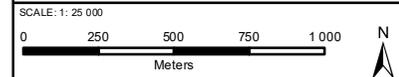
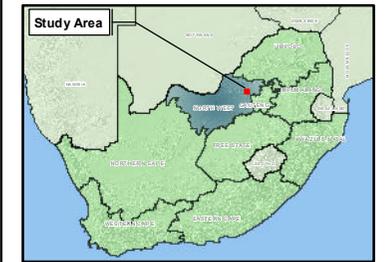
Legend

- Mining Right Areas
- 306JQ Portion 82
- UG1 Opencast Area
- Farm Portions

- Towns
- Buildings/Ruins

- Motorway
- Primary Road
- Secondary Road
- Tertiary Road
- Street/Road
- Railway
- Contours

- Cultivated Lands
- Open Areas
- Water Bodies



TITLE:
Figure 4:4 Farm portions relevant to the Waterval Mine

CLIENT:
GLENCORE

DATE: June 2022 PROJECT: WATERVAL_MINE

DRAWN: THURLOW MAPPING APPROVED: SVR

MAP	REV:
UG1_Opencast_Rev2.mxd	2

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Projection: Transverse Mercator CM: 27 Datum: WGS 84
 Source: Cadastral Chief Surveyor-General, Department of Rural Development and Land Reform
 DWA - NGA Geosites Inset: ESRI Data and Maps

SIZE:
A4

5 Description of the scope of the proposed overall activity

5.1 Listed and specified activities

5.1.1 Authorised listed and specified activities

Waterval Mine has several authorised listed activities included in the approved 2021 Consolidated EMPr. These listed activities are shown in Table 5:1

Table 5:1 Authorised activities and listed activities within the existing operation (Shangoni, 2021)

NAME OF ACTIVITY	ARIAL EXTENT OF ACTIVITY Ha or m ²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
<p>Waterval East and Waterval West: Underground mining and associated activities (including the following):</p> <ul style="list-style-type: none"> • Marking, drilling and blasting of holes; • Provision of support (underground); • Engineering activities (underground); • Shafts and Ventilation Shafts 	<p><u>Total extent of mining rights area (in terms of farm portions):</u></p> <ul style="list-style-type: none"> • 616.9699 hectares (as per existing approved mining rights 244MR 246MR 157 MR and 192MR) • 389.3787 hectares (as per additional mining right area 260MR) 	-	<p>This activity forms part of the approved mining rights and EMPr (in terms of the MPRDA, 2002) for Waterval Mine.</p> <p>This activity is also considered to form part of an existing 'Environmental Authorisation' for the mine. The mining activities (as per all mentioned mining rights covered in this EIAR / EMPr) were also included in the approved EMPr, dated 2009. The activities commenced prior to the promulgation of the EIA Regulations (GN. R 385, GN. R 386 and GN. R 387), dated April 2006.</p>
<p>Waterval East and Waterval West: Transporting of ore from underground to an area adjacent to the plant area by means of a conveyor.</p>	Linear activity.	-	These activities were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Waterval East			
Loading of ore at pickup area by means of a front-end loader into the jaw crusher.	<p><u>Total plant area:</u> ± 4.68 Ha (including all stockpiles)</p>	-	These activities were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Ore-processing: Crushing and Screening			
Ore-processing: Washing			
Waterval West			

NAME OF ACTIVITY	ARIAL EXTENT OF ACTIVITY Ha or m ²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
Loading of ore at pickup area by means of a front-end loader into the jaw crusher.	<u>Total plant area:</u> ± 8.56 Ha (including all stockpiles)	-	These activities were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Ore-processing: Crushing and Screening			
Ore-processing: Washing			
Waterval East and Waterval West: Conveying of ore within the plant area (from crushing and screening to washing plant and to various stockpiles) (i.e. use of conveyors).	Linear activity.	-	
Waterval East			
Stockpiling of topsoil	<u>Total plant area:</u> ± 4.68 Ha (including all stockpiles)	-	These activities were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Stockpiling of waste rock on waste rock dumps		-	
Stockpiling of Chrome product		-	
Pumping of tailings (via pipelines): <ul style="list-style-type: none"> From washing plant to thickener, and From thickener to existing TSF. 	Linear activity.	-	These activities were included in the approved EMPr, dated 2009, and the approved EMPr, dated 2011, and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Waterval West			
Stockpiling of topsoil	<u>Total plant area:</u> ± 8.56 Ha (including all stockpiles)	-	These activities were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Stockpiling of waste rock on waste rock dumps		-	
Stockpiling of Chrome product		-	
Pumping of tailings (via pipelines): <ul style="list-style-type: none"> From washing plant to thickener, and From thickener to existing TSF. 	Linear activity.	-	These activities were included in the approved EMPr, dated 2009, and the approved EMPr, dated 2011, and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Waterval East and Waterval West:	-	-	These activities were included in the approved EMPr, dated 2009 and are therefore

NAME OF ACTIVITY	ARIAL EXTENT OF ACTIVITY Ha or m ²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
Operation and maintenance of process water storage and pumping facilities at the plants.			considered to form part of the existing environmental authorisation for Waterval Mine.
Waterval East and Waterval West: Pumping of process water via pipelines: <ul style="list-style-type: none"> • Within the plant process; • Between storage facilities; • From the storm water dam and return water dam back to the process (from existing TSF). 	Linear activity.	-	These activities were included in the approved EMPr, dated 2009, and the approved EMPr, dated 2011, and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Waterval East and Waterval West: Operation and maintenance of existing TSF and associated infrastructure.	<u>Waterval East TSF & infrastructure:</u> ± 7.45 Ha <u>Waterval West TSF & infrastructure:</u> ± 7.05 Ha	-	These activities were included in the approved EMPr, dated 2009, and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Waterval East and Waterval West: Operation and maintenance of storm water and dirty water management measures (channels, berms etc.) within the mining area.	Linear activity. Forms part of the overall mining activities.	-	The storm water management measures include both existing and proposed measures for Waterval East and Waterval West. Existing storm water management measures were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation for Waterval Mine. ¹
Waterval East and Waterval West: Supply of water for domestic- and processing purposes: Abstraction from boreholes and underground.	Not applicable	-	These activities were included in the approved EMPr, dated 2009, and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.
Waterval East and Waterval West: Pumping of borehole water (via pipelines) from abstraction points to clean water storage facilities.	Linear activity.	-	
Waterval East			

¹ Any new storm water management measures, as per Annexure H11 (storm water management plan), that trigger listed activities (if any) in terms of the EIA Regulations, dated 2014, will be applied for as part of an Environmental Authorisation Application prior to construction thereof.

NAME OF ACTIVITY	ARIAL EXTENT OF ACTIVITY Ha or m ²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
Operation and maintenance of clean water storage facilities.	-	-	<p>These activities were included in the approved EMPr, dated 2009, and the approved EMPr, dated 2011, and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.</p> <p>The Waterval Mine has further been issued with a Water Use Licence (Licence No.: 03/A22H/ABFGJ/2749).</p>
Waterval West			
Operation and maintenance of clean water storage facilities:	-	-	<p>These activities were included in the approved EMPr, dated 2009, and the approved EMPr, dated 2011, and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.</p> <p>The Waterval Mine has further been issued with a Water Use Licence (Licence No.: 03/A22H/ABFGJ/2749).</p>
Waterval East and Waterval West: Use of borehole water: Plant processing activities, At septic tanks, and A change houses (ablution block), offices and workshops.	Not applicable	-	
Waterval East and Waterval West: Dust suppression activity on roads			
Waterval East and Waterval West: Operation and maintenance of septic tanks			
Waterval East and Waterval West: Maintenance activities: Workshop area	<u>Waterval East workshop, maintenance and waste management areas:</u> ± 2.07 Ha	-	
Waterval East and Waterval West: Possible on-site maintenance activities: Mining area			
Waterval East and Waterval West: Washing of vehicles			

NAME OF ACTIVITY	ARIAL EXTENT OF ACTIVITY Ha or m ²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
Waterval East and Waterval West: Storage, offloading and refuelling of hazardous substances (e.g. hydrocarbons (diesel and oil); chemicals etc.)	<u>maintenance and waste management areas:</u> ± 2.95 Ha		
Waterval East and Waterval West: Waste management activities on the mine, including: <ul style="list-style-type: none"> • The operation of the Salvage Yard; • Storage, handling, removal and disposal of general waste; • Storage, handling, removal and disposal of hazardous waste and old oil; • Storage, handling, removal and disposal of medical waste; and • Waste re-use and recycling activities. 			These activities were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation and waste management licence for Waterval Mine. Furthermore, Waterval Mine has a waste management licence (dated September 2013) (Ref: 12/9/11/L726/7) in terms of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (Government Notice (GN) 718, dated July 2009 ²), for the following waste management activities: Category A (1); (2) and (19).
Waterval East and Waterval West: Use and maintenance of: <ul style="list-style-type: none"> • Security entrance; • Weighbridge; • Office(s); and • Change houses (ablution block). 	<u>Waterval East offices and change house areas:</u> ± 1.08 Ha <u>Waterval West offices and change house areas:</u> ± 1.97 Ha	-	These activities were included in the approved EMPr, dated 2009 and are therefore considered to form part of the existing environmental authorisation for Waterval Mine.

² The list of Waste Management Activities that have, or are likely to have, a detrimental effect on the environment published under Government Notice (GN) 718, dated July 2009, in terms of section 19(2) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), has since been amended as part of GN 921, dated November 2013 and GN 633, dated July 2015. Category A(1), A(2) and A(3) are now regarded as Category C activities (for compliance with certain norms and standards, where relevant).

Transitional Provision No. 5 of GN 921 states that “A person who lawfully conducted a waste management activity that is no longer listed in Category A or B, but listed in Category C of this Schedule, on the date of coming into effect of this Notice, may continue with the waste management activity for the duration stipulated in the permit or waste management licence until the expiry date of the permit or waste management licence whereafter such a person must comply with the requirements or standards for that waste management activity.”

As per condition 13.11 of the waste management licence, the licence is valid for a period of 10 years (i.e. up until January 2023).

NAME OF ACTIVITY	ARIAL EXTENT OF ACTIVITY Ha or m ²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)/NOT LISTED
Waterval East and Waterval West: Operation and maintenance of explosives magazine	<u>Waterval East explosive depot:</u> ± 0.08 Ha <u>Waterval West explosive depot:</u> ± 0.39 Ha	-	
Waterval East and Waterval West: Use and / or maintenance of transformers.	Not Applicable	-	
Rehabilitation activities during the Decommissioning Phase, including: <ul style="list-style-type: none"> • Removal / demolition of mine infrastructure; • Sloping and levelling of all previously disturbed areas to sustainable free-draining land forms; • Topsoil placement (where applicable); • Re-vegetation; and Shaping, capping and vegetating of TSF's.	Refer to area extent for activities above.	-	Rehabilitation and Closure-related activities were included in the approved EMPr, dated 2009. However, Waterval Mine has a remaining Life of Mine in excess of 30 years. Any additional necessary authorisations for decommissioning and rehabilitation activities, will be applied for in future, where required.
Mine Closure		-	

5.1.2 Listed and specified activities associated with the proposed EMPr amendment

The listed activities associated with the proposed EMPr amendment to include the UG1 opencast project is shown in Table 5:2. The site layout plan is shown in Figure 5:1.

Table 5:2 Listed activities triggered by the UG1 opencast project

Name of activity	Aerial extent of the activity	Listed activity	Applicable listing notice	Waste management authorisation
<i>The development of-</i> <i>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;</i> <i>where such development occurs-</i> <i>(a) within a watercourse</i> <i>(c) within 32 metres of a watercourse, measures from the edge of a watercourse</i>		Activity 12	GN 327	

Name of activity	Aerial extent of the activity	Listed activity	Applicable listing notice	Waste management authorisation
<ul style="list-style-type: none"> • The following infrastructure will be situated within or within 32m of a delineated wetland or artificial wetland: <ul style="list-style-type: none"> ○ Opencast area (west) ○ Overburden stockpile (west) ○ Pollution water trench ○ Pollution water pipeline ○ Haul road ○ Internal roads 	<p>~1,5 ha</p> <p>~2 ha</p> <p>~120 m</p> <p>~120 m</p> <p>~500 m</p> <p>~120 m</p>			
<p><i>The infilling or depositing of any material of more than 10m³ into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10m³ from a watercourse</i></p> <ul style="list-style-type: none"> • The following infrastructure will be situated within a delineated wetland or artificial wetland: <ul style="list-style-type: none"> ○ Opencast area (west) ○ Overburden stockpile (west) ○ Pollution water trench ○ Pollution water pipeline ○ Haul road ○ Internal roads 	<p>~1,5 ha</p> <p>~2 ha</p> <p>~120 m</p> <p>~120 m</p> <p>~500 m</p> <p>~120 m</p>	Activity 19	GN 327	
<p><i>Any activity including the operation of that activity which requires an amendment or variation to a right or permit in terms of section 102 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity contained in this Listing Notice or in Listing Notice 3 of 2014, required for such amendment.</i></p> <p>Inclusion of PR 2060 into Glencore's mining right area requires a Section 102 amendment of a mining right in terms of the MPRDA.</p>	17,1988 ha	Activity 21D	GN 327	
<p><i>The development of a road – (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres</i></p> <ul style="list-style-type: none"> • Haul road • Internal access roads 	~4 km	Activity 24	GN 327	
<p><i>The clearance of an area of 1 ha or more, but less than 20ha of indigenous vegetation</i></p>		Activity 27	GN 327	

Name of activity	Aerial extent of the activity	Listed activity	Applicable listing notice	Waste management authorisation
<ul style="list-style-type: none"> Clearance of vegetation (degraded bushveld for construction of internal roads, eastern section of open pit and pollution water trench) Clearance of indigenous vegetation (Bushveld) for fence 	<p>~4 ha</p> <p>~2 ha</p>			
<p><i>The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent,</i></p> <ul style="list-style-type: none"> The following Section 21(g) water uses will be applied for: <ul style="list-style-type: none"> Pollution control dam Overburden stockpiles Run of mine/muck stockpile Backfilling with overburden material 	<p>1,5 ha</p> <p>5 ha and 4 ha</p> <p>~1ha</p> <p>~14 ha</p>	Activity 6	GN 325	
<p><i>Any activity including the operation of that activity which requires a mining right in terms of section 22 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the mining right</i></p> <ul style="list-style-type: none"> Development of an opencast mine 	~14 ha	Activity 17	GN 325	
<p><i>The development of a road wider than 4 meters with a reserve of less than 13.5m</i></p> <ul style="list-style-type: none"> Internal roads fall within section zoned as Sensitive Topography Zone (NW DEDECT BPDM Environmental Management Framework Tool) 	~ 1ha	Activity 4	GN 324	
<p><i>The clearance of an area of more than 300m² or more of indigenous vegetation</i></p> <ul style="list-style-type: none"> Part of the fence area where vegetation will be cleared falls within a CBA as per the North West Biodiversity Sector Plan 	~2 ha	Activity 12	GN 324	
<p><i>The development of-</i> <i>(ii) infrastructure or structures with a physical footprint of 10 square meters or more</i></p>	~2 ha	Activity 14	GN 324	

Name of activity	Aerial extent of the activity	Listed activity	Applicable listing notice	Waste management authorisation
<p><i>where such development occurs</i></p> <p>(a) <i>within a watercourse</i></p> <p>(c) <i>within 32 metres of a watercourse, measured from the edge of watercourse</i></p> <ul style="list-style-type: none"> Development of a fence in a riparian zone of a CBA as per the North West Biodiversity Sector Plan. 				
<p><i>The disposal of any quantity of hazardous waste to land</i></p> <ul style="list-style-type: none"> Two overburden stockpiles ROM/muck stockpile 	5 ha and 4 ha ~1 ha			Category B Activity 7
<p><i>Construction of a facility for a waste management activity listed under Category B of this Schedule (not in isolation to associated waste management activity)</i></p> <ul style="list-style-type: none"> Two overburden stockpiles ROM/muck stockpile 	5 ha and 4 ha ~1 ha			Category B Activity 10
<p><i>The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right, exploration right or production right in terms of the MPRDA</i></p> <ul style="list-style-type: none"> Two overburden stockpiles ROM/muck stockpile 	5 ha and 4 ha ~1 ha			Category B Activity 11

5.2 Description of the activities to be undertaken

The proposed UG1 opencast project will include the opencast mining of the chromite layer on the remaining extent of portion 82 of the farm Waterval 306 JQ. There is possible 3 million tons of the UG1 chromite layer that can potentially be mined using opencast mining methods.

Several new infrastructure will be constructed in support of the opencast project. Additional information is presented in Table 5:3.

The project will take place in three phases. The proposed schedule for the phases is as follows:

- Construction Phase: ~ Two months
- Operational Phase: ~ 3 years
- Decommissioning and Closure Phase: ~ 6 – 12 months Construction phase

5.2.1 Construction phase

The construction phase for the Waterval opencast mine will take a maximum of two months. The opencast operation area will be fenced and will cover an area of approximately 85 ha.

During the construction phase, surface preparations of the project area will be done by vegetation clearing and compaction. A laydown area for the receipt, temporary storage, and assembly of construction equipment and other supplies will be demarcated.

Table 5:3 details the proposed surface infrastructure to be constructed as part of the UG1 opencast project. The site layout plan is shown in Figure 5:1.

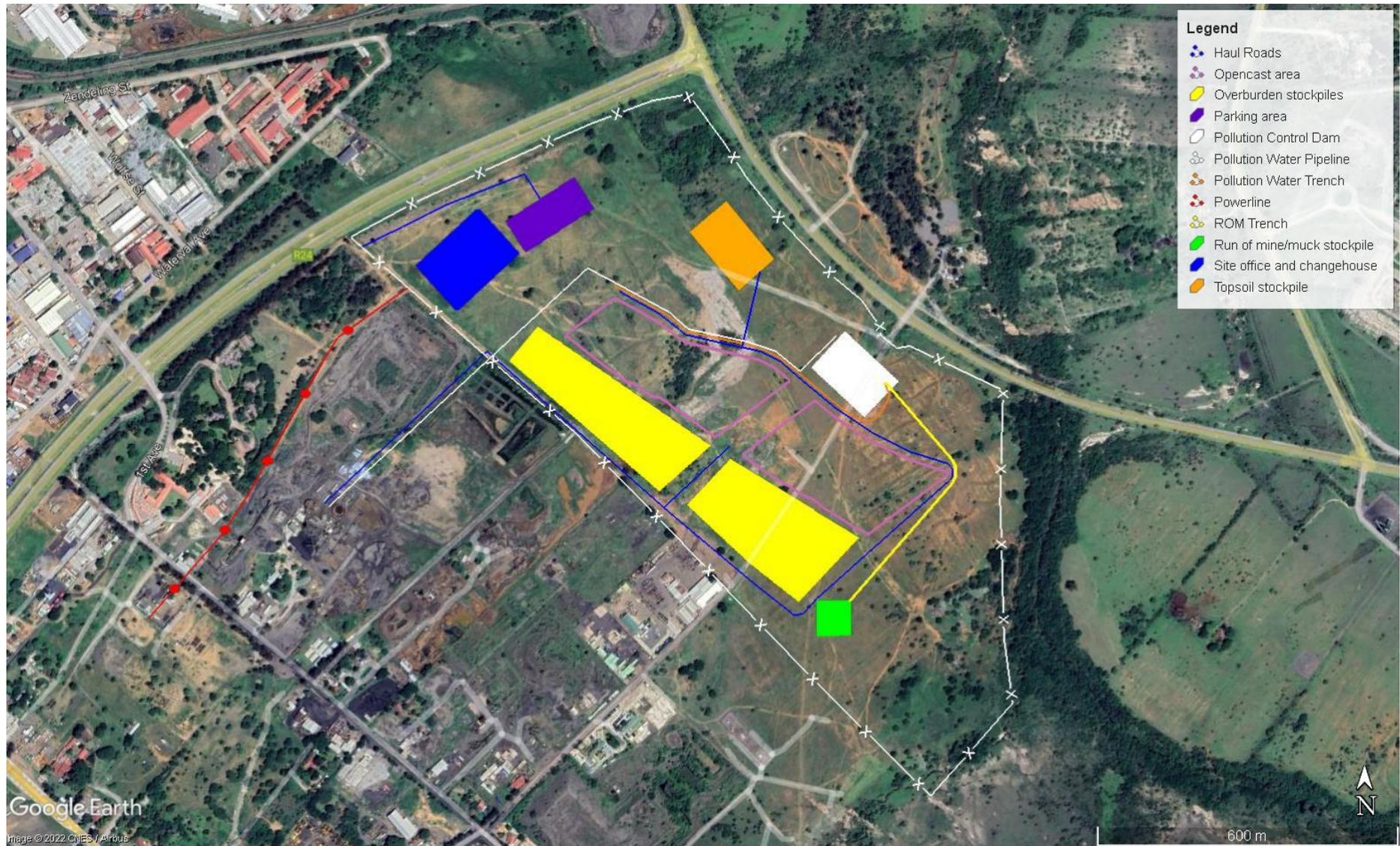


Figure 5:1 Site layout plan

Table 5:3 Proposed infrastructure for the UG1 opencast project

Proposed infrastructure	Description
Surface infrastructure	
Roads	An access road, internal roads, haul roads and in-pit roads will be developed as part of the proposed UG1 opencast project.
Power	Electrical reticulation for the offices and change house area will be installed. A 1.2 km long 11 kV overhead line will be constructed from the planned new substation.
Pipelines	Potable water will be received from the Rustenburg Local Municipality. A pollution water pipeline will be constructed aboveground from the Pollution Control Dam (PCD) to the Waterval West Plant, in order to re-use the water in the plant. Effluent pipes for offices and the change houses will be constructed to tie the concrete sewer line, which in turn will tie into the municipal sewer line.
Bulk storage for fuel	No fuel be stored within the UG1 opencast project area. Fuel will be obtained from the UG2 refuelling facilities at the Waterval West Plant.
Fencing	The UG1 opencast area will have a razor wire and electric boundary fence. The PCD will have palisade fencing.
Buildings	Two site offices will be built. These facilities will be non-permanent, pre-fabricated structures and will be placed on hard standing. Change houses will be built to the southeast of the pits adjacent to the site offices. These facilities will be non-permanent, pre-fabricated structures and will be placed on hard standing. No workshops will be required. The current Waterval East workshops will be utilised. A brick-paved carport will be constructed within a minimum of 30 carports.
Laydown area	A laydown area will be required during the construction phase. The laydown area will not require earthworks, berms, clean and dirty water separation as it will be refurbished structures for offices and change houses. The only earthworks that will be required will be for water, electrical and sewage reticulation. The laydown area will be of steel re-enforced concrete for placement of refurbished offices and change houses.
Stockpiles	
Topsoil stockpile	Topsoil will be removed and stockpiled separately from the overburden and used to rehabilitate the area at a later stage.
Overburden stockpile	Overburden material of three benches will be removed and placed adjacent to the opencast pit (it is estimated that there will be two overburden stockpiles). Once mining of the bench is completed, the overburden will be backfilled into the excavation, and covered with topsoil.

Proposed infrastructure	Description
Waste rock stockpile	The proposed UG1 opencast project does not require a waste rock dump. All blasted material will be excavated and hauled to the operating Waterval West Plant.
Run of mine stockpile	A run of mine (ROM) and muck stockpile area will be required.
Waste management facilities	
General waste	General waste (including domestic waste, paper, plastic and scrap steel) will be stored in skips to be placed on a concrete bunded area. Skips will be located at the change houses/offices area.
Hazardous waste	Hazardous waste will be temporarily stored in covered skips to be placed on a concreted bunded area. A contracted service provider will remove and empty skips regularly. Skips will be located at the change houses/offices area.
Water pollution management facilities	
Pollution control dam (PCD)	A PCD will be constructed to contain dirty water from the UG1 opencast operation and run-off from the ROM/muck stockpile. The PCD will be sized to contain the 24 hour 1:50 year rainfall event. Water from the PCD will be transported to the Waterval West plant to be used in processing.
Pollution water trench	A pollution water trench will be constructed to the north east of the opencast pits. The pollution water trench will drain into the PCD. In addition, a pollution water trench will be constructed from the ROM stockpile to the PCD. The pollution water trenches will be concrete lined.
Sewage treatment plant	No sewage treatment plant will be required.
Ablution facilities	Ablutions facilities will be constructed at the offices and change houses.
In pit storage of water	Water will not be stored in the opencast pits. Any water that accumulates/occurs within the pit will be pumped out to the PCD. No water will be generated by mining activity as all drilling will be done dry.

The construction phase will also include the removal/clearance of vegetation from the opencast pit areas. The topsoil will also be removed and placed within the topsoil stockpile area.

5.2.2 Operational phase

During the operational phase, a boxcut will be developed and opencast pits on either side of the boxcut will be developed to mine the UG1 reef. The boxcut will be approximately 1.5 ha and each opencast pit will be approximately 6 ha, with a maximum depth of approximately 45m.

After topsoil has been removed and stockpiled, overburden material will be blasted and placed on the overburden stockpile. This material will be used during rehabilitation of the opencast pit.

During the operational phase, drill and blast mining methods will be implemented. A pattern will be marked by the blaster/miner, using a burden that will be determined by the blasting specialist based on the rock strength and required fragmentation. The most efficient drilling pattern will be designed and used, which will also meet

the minimum legal requirements in terms of fly rock, air and ground vibrations etc. A surface drill rig will be used to drill a number of vertical holes, at a specified depth as determined by the blasting specialist. The drilled holes will be charged up with explosives which may be in the form of prill type explosives, (expanfo); emulsion or a type as will be prescribed by the blasting specialist. The proposed mine plan is shown in Figure 5:2.

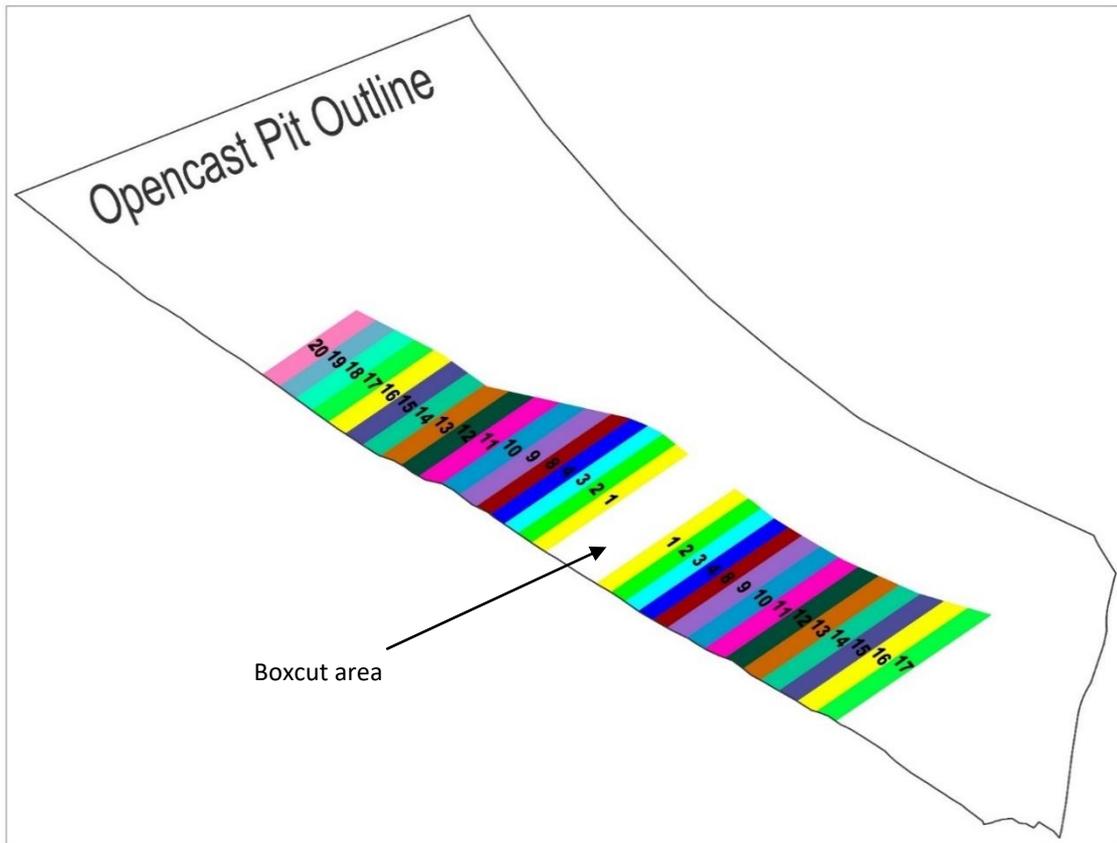


Figure 5:2 Proposed mine plan for the UG1 opencast project

The average production profile is as follows:

- ~420 000 tonnes per annum for a period of three (3) years;
- ~40 000 tonnes per month;
- ~10 000 tonnes per week.

All blasted material from the opencast pits will be collected in 30t trucks and transported on the new proposed haul road to the operating Waterval West Plant.

There will be overburden stockpiles and a ROM stockpile in the event of breakdowns where ROM cannot be immediately transported to the plant. There will be no waste rock stockpiles.

Ore material will be processed in the authorised Waterval West Plant and treated material (chromitite) will be sold to the smelters.

Filter cake will be transported to the Kroondal Mine for processing at the PGM Plant.

5.2.3 Closure phase

Concurrent rehabilitation will take place during the operational phase. Backfilling of benches with overburden material will take place as the mining benches are advanced. Each bench will be fully rehabilitated and covered with topsoil as backfilled.

The overburden stockpiles will be deposited to 18deg (1(H): 3(V)) and covered with available topsoil and vegetated. This will be part of concurrent rehabilitation.

At closure or at Life of Mine, a void will unavoidably be formed due to the material removed from the opencast pits to the plant. The voids will be safeguarded with fencing and safety berms at closure.

All infrastructure (canals, fences, roads, laydown area, pipelines) not issued to the community will be demolished and the area rehabilitated by ripping and revegetating to be able to deliver an area as close as possible to the natural state.

The PCD will be decommissioned as the liner provides a safety hazard for slipping and removal of the liner will leave the PCD permeable.

6 Policy and legislative context

Table 6:1 provides an overview of the policy and legislative context applicable to the project and will be considered during the assessment process.

Table 6:1 Policy and legislative context

Applicable legislation and guidelines used to compile the report	Reference where applied
<p><u>Constitution of the Republic of South Africa (Act No. 108 of 1996)</u></p> <p>Section 24 of the Constitution provides that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures, that –</p> <ul style="list-style-type: none"> i. Prevent pollution and ecological degradation; ii. Promote conservation; <p>Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>	<p>The environmental management objectives of the project will be to protect ecologically sensitive areas and to support sustainable development and the use of natural resources, whilst promoting justifiable socio-economic development.</p> <p>The Constitution of South Africa is the overarching framework legislation driving the NEMA principles and therefore the S&EIR process.</p> <p>The proposed, high-level mitigation and management measures to minimise and prevent negative impacts associated with the project are shown in Table 21:1.</p>
<p><u>Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA)</u></p> <p>Section 102 of the MPRDA states that: A reconnaissance permission, prospecting right, mining right, mining permit, retention permit, technical corporation permit, reconnaissance permit, exploration right and production right work programme; mining work programme, environmental management programme, and environmental management plan may not be amended or varied (including by extension of the area covered by it or by the addition of minerals or a share or shares or seams, mineralised bodies, or strata, which are not at the time the subject thereof) without the written consent of the Minister.</p>	<p>Glencore will undertake a Section 102 process in terms of the MPRDA to update the Mining Works Programme to include the proposed UG1 opencast project and to update Mining Right Area to include PR2060.</p>
<p><u>National Environmental Management Act (Act No. 107 of 1998) (NEMA)</u></p> <p>In terms of the section 24(5) read with section 44 of NEMA, Environmental Impact Assessment (EIA) Regulations have been published to provide lists of activities that require environmental authorisation before they may commence.</p>	<p>The proposed UG1 opencast project triggers listed activities contained in Listing Notice 1, 2 and 3 of the EIA Regulations, therefore requiring a S&EIR environmental authorisation process.</p> <p>This Scoping Report has been compiled in accordance with the requirements of the NEMA EIA Regulations (2014) (as amended).</p>

Applicable legislation and guidelines used to compile the report	Reference where applied
<p>There are three listings, each requiring a different type of environmental authorisation process.</p> <ul style="list-style-type: none"> • Listing 1: Activities requiring a Basic Assessment process (approximately 197 days) • Listing 2: Activities requiring a Scoping and Environmental Impact Reporting (S&EIR) process (approximately 300 days) • Listing 3: Activities within certain geographic areas requiring a Basic Assessment process (approximately 197 days) 	<p>Refer to Table 5:2 for the listed activities triggered by the proposed UG1 opencast project.</p>
<p><u>National Environmental Management: Waste Act (Act No.59 of 2008) (NEM:WA)</u></p> <p>NEMWA aims to provide regulation for waste management in order to protect health and the environment, for the prevention of pollution and ecological degradation and for securing ecologically sustainable development.</p> <p>NEM:WA has three categories of activities that require environmental authorisation.</p> <p>Category A: Activities requiring a Basic Assessment process</p> <p>Category B: Activities requiring a S&EIR process</p> <p>Category C: Activities that do not require an environmental authorisation process, but need adhere to the required Norms and Standards.</p>	<p>The proposed UG1 opencast project triggers Category B activities, and therefore requires a S&EIR environmental authorisation process.</p> <p>Refer to Table 5:2 for the Category B activities triggered by the proposed UG1 opencast project.</p>
<p><u>National Heritage Resources Act (Act No. 25 of 1999) (NHRA)</u></p> <p>The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) is the overarching legislation that protects and regulates the management of heritage resources in South Africa.</p>	<p>A Heritage Impact Assessment (HIA) in terms of the NHRA will be undertaken on the proposed project area to determine if any heritage resources are located on the project area.</p> <p>The HIA, Draft Scoping Report and Draft EIA/EMPR will be submitted to the South African Heritage Resources Agency (SAHRA) for comment.</p>
<p><u>National Environmental Management: Air Quality Act (Act No. 39 of 2004) (NEM:AQA)</u></p> <p>According to the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM: AQA) the Department of Forestry Fisheries and the Environment (DFFE), the provincial</p>	<p>An Air Quality Impact Assessment will be undertaken as part of the S&EIR process. The findings of the specialist study will be included in the Draft EIA/EMPr.</p> <p>An Air Emissions Licence will not be required, as no Atmospheric Emissions listed activities are triggered by the proposed UG1 opencast project.</p>

Applicable legislation and guidelines used to compile the report	Reference where applied
<p>environmental departments and local authorities (district and local municipalities) are separately and jointly responsible for the implementation and enforcement of various aspects of NEM: AQA. A fundamental aspect of the approach to the air quality regulation, as reflected in the NEM: AQA is the establishment of National Ambient Air Quality Standards (NAAQS). These standards provide the goals for air quality management plans and also provide the benchmark by which the effectiveness of these management plans is measured.</p>	
<p><u>National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM:BA)</u></p> <p>The National Environmental Biodiversity Act, Act 10 of 2004 (NEMBA) provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA. The Act relates to the protection of species and ecosystems that warrant national protection, among others</p>	<p>A terrestrial biodiversity assessment will be undertaken and will take into considerations the requirements of NEM:BA, NEM:PAA and the National Forest Act.</p> <p>The assessment will determine the presence of Critical Biodiversity Areas, Protected Areas and protected species/species of conservation concern. Should protected plant species be present on the proposed project footprint area, the required permits will be obtained for their removal, relocation or destruction.</p>
<p><u>The National Environmental Management: Protected Areas Act (Act No. 57 of 2003) (NEM:PAA)</u></p> <p>NEM:PAA is a complimentary act to NEMA. NEMPAA aims to provide for the protection and conservation of ecologically viable areas that are representative of South Africa's biological diversity. This objective is accomplished through the declaration and management and protected these identified areas (section 2).</p>	
<p><u>National Forestry Act (Act No. 84 of 198) (NFA)</u></p> <p>The NFA protects against the cutting, disturbance, damage, destruction or removal of protected trees. During the specialist investigation phase it will be determined if a permit from the Department of Forestry, Fisheries and the Environment (DFFE) which authorises the removal and transplantation of trees, will be required.</p>	
<p><u>National Water Act (Act No. 36 of 1998) (NWA)</u></p> <p>NWA makes provision for water resource management, protection of the quality of water resources and recognising the need for the</p>	<p>The proposed UG1 opencast activities will require a Water Use Licence Application (WULA) to authorise water uses in terms of Section 21 of the NWA.</p> <p>The following water uses are expected to be authorised:</p>

Applicable legislation and guidelines used to compile the report	Reference where applied
integrated management of all aspects of water resources to achieve sustainable use of water.	Section 21 (a) – taking water from a resource Section 21 (c) – impeding or diverting flow of water in a watercourse Section 21 (g) – disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource Section 21 (i) – altering the bed, banks course or characteristics of a watercourse Section 21 (j) – removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people
<u>Mine Health and Safety Act (Act No. 29 of 1996) (MHSA)</u> The Mine Health and Safety Act (Act No. 29 of 1996) (MHSA) aims to provide for protection of the health and safety of all employees and other personnel at the mines of South Africa	The purpose of the MHSA is to provide for protection of the health and safety of employees and other persons at mines and, for that purpose to promote a culture of health and safety; to provide for the enforcement of health and safety measures.

7 Need and desirability of the proposed activities

Information on this section was obtained from the approved 2021 Consolidated EMP, compiled by Shangoni.

As per the Waterval Mine's Social and Labour Plan (SLP) (2016 - 2020), Rustenburg Local Municipality is reputed to be one of South Africa's fastest growing urban areas. This significant growth is largely attributed to the impact of the world's four largest mines in the immediate vicinity of the town, namely, Anglo American Platinum, Impala Platinum, Glencore and Sibanye-Stillwater. The mining sector providing around 50% of all formal employment within Rustenburg Local Municipality.

The National Spatial Development Perspective emphasizes the need for infrastructural development in high development corridors and areas of latent potential, and investment in people in these areas has been considered as one of the guiding development perspectives used in the Rustenburg Local Municipality Integrated Development Plan (IDP). The Rustenburg Local Municipality IDP indicated that the municipality faces many challenges some of which include a lack of availability to land, insufficient quality and quantity of water and electricity, a declining agricultural sector and the general level of education of most of the locals.

Through the Social and Labour Plan Waterval aim on developing and implementing comprehensive Human Resources Development Programmes, a Mine Community Development Plan, a Housing and Living Conditions Plan, an Employment Equity Plan, and Processes to save jobs and manage downscaling and/or closure. The above programmes are aimed at promoting employment and advancement of the social and economic welfare of all South Africans whilst ensuring economic growth and socio-economic development.

Waterval Mine will strive to fulfil the following objectives in developing and implementing the Social and Labour Plan:

- a) Promote economic growth and mineral and petroleum resources development in the Republic;
- b) Promote employment and advance the social and economic welfare of all South Africans;
- c) Contribute towards the socio-economic development of the areas in which Waterval is operating as well as the areas from which the majority of the workforce is sourced; and
- d) To utilize and expand the existing skills base for the empowerment of Historically Disadvantaged South Africans (HDSA) and to serve the community.

The mine is aware of the socio - economic pressure on the hosting community and that alternative work in the surrounding area is limited as well as the additional needs for municipal services and infrastructure. To limit the negative impact of the mining operation on the area, the mine has a resilient focus on local recruitment and undertakes to retain this focus.

The purpose of implementing the UG1 opencast project at the Waterval Mine is to access the remaining chrome resource within the existing mining right area to provide ore material to the existing Waterval West processing plant. Currently, the only material processed by the Waterval West plant, is tailings material obtained from the Waterval East and West Tailings Storage Facilities. The opencast mining activities will provide additional material to be processed in the Waterval West processing plant, once the Waterval West TSF has been completely remined.

Therefore, the UG1 opencast project will ensure that Glencore's Waterval Mine Waterval West plant will continue to receive mineral-bearing material to ensure the continued operations at Waterval Mine and retain jobs.

8 Period for which the environmental authorisation is required

The total period for which authorisation has been granted in the 2021 Consolidated EMPr, is equal to the remaining Life of Mine (LOM) for Waterval Mine, which is in excess of 30 years. Refer to Table 8:1. The proposed UG1 opencast project timeframes are as follows:

The project will take place in three phases: The proposed schedule for the phases is as follows:

- Construction Phase ≈ Two months
- Operation Phase ≈ 3 years
- Decommissioning and Closure Phase ≈ 6 – 12 months

Therefore, no additional period of environmental authorisation is required, and the 30 year period for which environmental authorisation is required remains unchanged.

Table 8:1 Period for which authorisation is required (Shangoni, 2021) (approved)

Stages of operation	Timeframe (Years)
Planning	N/A
Construction (proposed infrastructure as described in this EIAR / EMPr)	1 year
Commissioning (proposed infrastructure as described in this EIAR / EMPr)	1 year
Operation (ongoing)	> 30 years
Decommissioning and Closure	± 8 years
Total Period	> 30 years

9 Description of the process followed to reach the preferred site

NEMA prescribes that every application for EA must include, *inter alia*, an investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity (i.e. No-Go Alternative). “Alternatives”, in relation to a proposed activity, are different ways of meeting the general purposes and requirements of the proposed activity, which may include alternatives to:

- the location where it is proposed to undertake the activity;
- the type of activity to be undertaken;
- the technology to be used in the activity; and
- the option of not implementing the activity.

This section presents the various alternatives considered in this Scoping Report.

Table 9:1 Alternatives as provided through the NEMA

Alternative	Definition
Activity	Refers to alternatives in the nature of the proposed activity. Can be defined as project alternatives.
Location	Refers to alternatives in the location of the proposed activity. This can be considered for the entire proposal or for a component of the proposal. A distinction should be drawn between alternative locations that are geographically separate and alternative locations that are site layout alternatives.

Alternative	Definition
Technology	Refers to alternatives in technology and equipment used. The aim of this is to reach the same goal by using different methods or processes.
Site Layout	Refers to alternatives in spatial configuration of an activity on a particular site.
Scale	Refers to activities that can be broken down into smaller units and undertaken at different scales.
Design	Refers to alternatives in design for aesthetic purposes or different construction materials in an attempt to optimise local benefits and sustainability.

10 Details of Alternatives considered

10.1 Property or location alternatives

The property for the preferred location has been selected as it is located within Glencore’s existing mining right area on property owned by Glencore (remaining extent of Portion 82 of the farm Waterval 306 JQ).

The preferred location has also been constrained due to the location of the mineral resource and proven reserve, the shallowness of the reserve as well as the location of the site in relation to the Waterval West processing plant. The proposed location of the UG1 opencast project will allow Waterval Mine to continue with processing of ore at its existing Waterval West plant.

10.2 Type of activity

The activities to be undertaken will be the establishment of the UG1 opencast mine with a life of mine of approximately 3 years. Opencast mining on the mining right area will ensure continued supply of ore material to the existing Waterval West processing plant. These opencast operations will make use of the roll over mining method.

Due to shallowness of the reef, underground mining seems to be proven unsuitable for the area.

10.3 The design or layout of the activity

The following aspects were taken into consideration for the design/layout of the proposed UG1 opencast project:

- Location of mining right area;
- Location of properties owned by Glencore;
- Position of the UG1 outcrop;
- Location of the proven reserve;
- Delineated wetlands;
- Critical Biodiversity Areas; and
- Proximity to the existing Waterval Mine infrastructure (specifically Waterval West beneficiation plant).

The layout of the opencast has limited alternatives as it is constrained to the location of the UG1 outcrop and proven reserve.

The layout was developed to place other surface infrastructure outside delineated wetlands as far as possible, to ensure the least environmental impact to these wetlands.

The layout was further developed to avoid the placement of infrastructure on Critical Biodiversity Areas, and to place surface infrastructure on areas that have been previously disturbed by farming practices (secondary grassland areas) and degraded bushveld areas. This will ensure that there is limited impact to undisturbed biodiversity areas.

10.4 Operational aspects of the activity

The application is for an opencast mining process in which: the topsoil is firstly removed and stockpiled for use during rehabilitation. Secondly, as much soft overburden material as possible is removed without the use of blasting techniques. This material is stockpiled separately from the topsoil.

Chromite mined will then be transported via an internal haul road to the existing Waterval West processing plant. Fissure water and rainwater that collects within the pit will be re-used at the Waterval West processing plant.

The above operational description is seen as the most effective way of operating as it makes use of existing processing infrastructure and facilities to cause the least possible environmental disturbance.

10.5 Option of not implementing the activity

The purpose of implementing the activity is for Waterval Mine to access the remaining chrome resource within the existing mining right area to provide ore material to the existing Waterval West processing plant. Currently, the only material processed by the Waterval West plant, is tailings material obtained from the Waterval East and West Tailing Storage Facilities. The opencast mining activities will provide additional material to be processed in the Waterval West processing plant, once the Waterval West TSF has been completely remined.

The no-go option will require a re-evaluation of the Waterval Mine business structure and may result in closure of the mine.

11 Details of the Public Participation Process followed

11.1 Objectives of public participation

The objectives of the public participation process are as follows:

- To introduce the proposed project to identified stakeholders/Interested and Affected Parties (I&APs) and to inform them of the environmental authorisation process to be followed;
- To provide sufficient and accessible information to identified stakeholders/I&APs; and
- To provide stakeholders/I&APs opportunities to provide comment, raise concerns or provide suggestions for enhanced benefits.

11.2 Public Participation Process

A public participation process has been undertaken in support of the scoping phase of the environmental authorisation application, inclusive of site notices, newspaper advertisements, Background Information Document (BID), notification letters, an open day and making the Draft environmental authorisation documentation available for public comment.

A summary of the process to be followed is provided in Table 11:1 below and will be documented in the Final Scoping Report and Draft EIA/EMPr document.

Table 11:1 Summary of the Public Participation Process

Activity	Description
Pre-application phase	
Identification of stakeholders	<p>Waterval Mine’s existing stakeholder database was utilised to commence with the identification of potential stakeholders to consult with during the public participation process. The following stakeholders were identified:</p> <ul style="list-style-type: none"> • Department of Mineral Resources and Energy (DMRE) (competent authority); • Department of Water and Sanitation (DWS); • North West Department of Economic Development, Environment and Tourism (NWDEDECT); • North West Department of Agriculture and Rural Development; • Department of Public Works; • South African Heritage Resources Agency (SAHRA); • Rustenburg Local Municipality; • Bojanala Platinum District Municipality; • Landowners and adjacent landowners; • Provincial roads department; and • Magalies Biosphere Reserve. <p>Refer to Appendix B1 for a list of identified stakeholders.</p>
Pre-application meeting	<ul style="list-style-type: none"> • A pre-application meeting was held with the competent authority (DMRE) on 24 June 2022. Minutes of the meeting is available in Appendix B2.
Site Notices	<ul style="list-style-type: none"> • English and Setswana site notices were placed around the proposed UG1 opencast project area and at Waterval Mine’s entrance. Proof of placement of site notices are available in Appendix B3. • The site notices provide information on the project and details on how to register as an Interested and Affected Party.
Background Information Document	<ul style="list-style-type: none"> • A Background Information Document (BID) was distributed via email to identified stakeholders. A copy of the BID is provided in Appendix B4. Proof of distribution is available in Appendix B5. • The BID includes an introduction to the project, information on the proposed activities, details of the process to be followed, details of the public participation process and an invitation to register as an Interested and Affected Party.
Scoping Phase	
Newspaper Advertisement	<ul style="list-style-type: none"> • Newspaper advertisements were placed in the Rustenburg Herald and Platinum Weekly Newspapers in English on 2 September 2022. Refer to Appendix B6 for a copy of the advertisements. • The newspaper advertisement contained a brief introduction to the project, the availability of the Draft Scoping Report for public comment, details of public participation process and a request to register as an Interested and Affected Party.
Notification letters	<ul style="list-style-type: none"> • A notification letter (Appendix B7) was distributed to all registered stakeholders informing them of the availability of the Draft Scoping Report for public comment, as well as inviting them to the public open day. Proof of the distribution of the notification letter is available in Appendix B8 • Stakeholders were encouraged to provide comments to the EAP for inclusion in the Draft EIA/EMP document.

Activity	Description
Availability of Draft Scoping Report for public comment	<ul style="list-style-type: none"> • The Draft Scoping Report is currently available for comment for 30 calendar days (2 September to 3 October 2022). • The Draft Scoping Report is available for public comment at the following locations: <ul style="list-style-type: none"> ○ Waterval Mine Security Offices; ○ Rustenburg Public Library; ○ Offices of Alta van Dyk Environmental Consultants, 4 Garcia Peak, Midlands Estate, Centurion, Gauteng; • Website: https://www.altavandykenvironmental.co.za/public-documents/
Open day	<ul style="list-style-type: none"> • An open day will be held during public comment period of the Draft Scoping Report to obtain comments from stakeholders. • Comments received will be included in the Final Scoping Report to be submitted to the DMRE, as well as in the Draft EIA/EMP document.
Environmental Impact Assessment Phase	
Newspaper Advertisement	<ul style="list-style-type: none"> • Newspaper advertisements will be placed in the Rustenburg Herald and Platinum Weekly Newspapers in English. • The newspaper advertisements will contain a brief introduction to the project, the availability of the Draft EIA/EMPr for public comment, details of public participation process and a request to register as an Interested and Affected Party.
Notification letters	<ul style="list-style-type: none"> • A notification letter will be distributed to all registered stakeholders informing them of the availability of the Draft EIA/EMPr for public comment, as well as inviting them to the open day. • Stakeholders will be encouraged to provide comments to the EAP for inclusion in the Final EIA/EMPr document to be submitted to the DMRE.
Availability of Draft EIA/EMPr for public comment	<ul style="list-style-type: none"> • The Draft EIA/EMPr will be placed in the public domain for 30 calendar days • The draft documentation will be placed at the following locations: <ul style="list-style-type: none"> ○ Waterval Mine Offices; ○ Rustenburg Public Library ○ Offices of Alta van Dyk Environmental Consultants, 4 Garcia Peak, Midlands Estate, Centurion, Gauteng; • Website: https://www.altavandykenvironmental.co.za/public-documents/
Open day	<ul style="list-style-type: none"> • An open day will be held during public comment period of the Draft EIA/EMPr to obtain comments from stakeholders. • Comments received will be included in the Final EIA/EMPr to be submitted to the DMRE.
Decision making phase	
Notification letter	<ul style="list-style-type: none"> • A notification letter will be distributed to all registered stakeholders informing them of the decision made by the DMRE. • The notification letter will provide details on the appeal process and the associated timeframes, should thy wish to appeal the decision.

11.3 Summary of comments received by I&APs

All comments received from I&APs are included in Table 11:2.

Table 11:2 Comments raised to date by I&APs during the stakeholder engagement process

Interested and affected party	Date comments received	Source	Comment raised	EAP's response to comments as mandated by the applicant	Consultation status
Department of Mineral Energy and Resources (DMRE)	24 June 2022 Thilivhali Meregi	Minutes of meeting	Public participation material should also be made available in Setswana.	Site notices and BIDs were made available in English and Setswana. Refer to Appendix B3 and B4.	Completed
			Public meetings should be undertaken as part of the public participation process.	An open day is planned for 22 September 2022. Refer to invitation to open day in Appendix B7.	Completed
Department of Public Works & Roads	3 August 2022 Keoagile Sitase	Email	Could you please provide us with the Kmz files as illustrated by "Figure 2: Proposed Layout for the UG1 Opencast project" (<i>of the Background Information Document</i>).	The kmz files were sent via an email to Keoagile Sitase on 15 August 2022.	Completed
Department of Public Works & Roads	25 August 2022 Keoagile Sitase	Email/letter	<p>Your Notice dated 29 July 2022 has reference. This permission is issued in terms of the Advertising on Roads and Ribbon Development Act, Act No 21 of 1940 and Roads Ordinance No 22 of 1957 as amended.</p> <p>There is no objection to the proposed development, subject to the strict adherence of the attached Specific and Special Conditions and should form part of the proposed planning/development, also that the conditions/requirements listed below are imposed and met in all respects by the applicant.</p> <p>A written confirmation of acceptance of the attached conditions is required. In the event of not receiving a written acceptance of</p>	<p>The Department's comments have been noted and sent to Glencore for review. Once Glencore has reviewed and agreed to the conditions, a letter of acceptance will be submitted to the Department of Public Works.</p> <p>Mr Jan Oliver has been added to the list of stakeholders. Please refer to Appendix B1.</p>	Ongoing

Interested and affected party	Date comments received	Source	Comment raised	EAP's response to comments as mandated by the applicant	Consultation status
			<p>conditions, the approval is withdrawn and this approval is cancelled</p> <p>Route 24 form part of the National Road Network, you therefore been advised to consult SANRAL on the following:</p> <p>Mr Jan Oliver Statutory Control Section</p>		

12 The environmental attributes associated with the site

Information for this chapter was obtained from Shangoni's approved 2021 Consolidated EMPr, unless indicated otherwise.

12.1 Topography

12.1.1 Regional

The hydrographic basin of the area is almost entirely formed by the northern slopes of the Magaliesberg mountain range. Four main streams and their tributaries drain the area northwards to the low-lying areas where the whole drainage system enters the Crocodile River. These four streams are the Crocodile River itself (across the area of Brits), the Elandspruit, and the Sterkstroom (across the area of Mooinooi/Marikana) and the Hex River (across the area of Kroondal/Rustenburg). This whole drainage system cuts across, perpendicularly, the narrow and elongated strips of the geological, edaphic and vegetation formations of the area.

12.1.2 Site specific

The altitude of the area varies from ± 1160 m at the south western corner of the property and slopes downward towards the north west and east reaching altitudes of 1140 m in the vicinity of the Hex River. The natural topography of the Waterval mining area is relatively flat with a gentle, even slope from south to north, with the natural vegetation existing being savannah grasslands. Agricultural farming is temporarily sterilised due to mining activities although agricultural farming is minimised in this area due to a lack of groundwater.

12.2 Climate

12.2.1 Temperature

The monthly distribution of average daily maximum temperatures (refer to Figure 12:1 and Figure 12:2 below) shows that the average midday temperatures for Rustenburg range from 19.3°C in June to 29.4°C in January. The region is the coldest during July when the mercury drops to 1.7°C on average during the night.

Table 12:1 Average midday and night time temperatures in °C (Shangoni, 2021)

	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
Midday	29	29	27	25	22	18	19	22	26	28	28	29
Night time	16	16	14	10	5	2	1	4	9	13	14	15

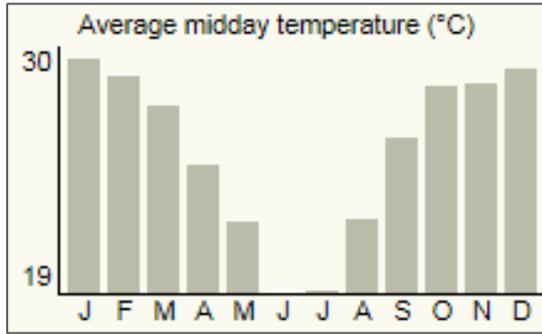


Figure 12:1: Average midday temperature per month for Rustenburg (source: http://www.saexplorer.co.za/south-africa/climate/rustenburg_climate.asp)

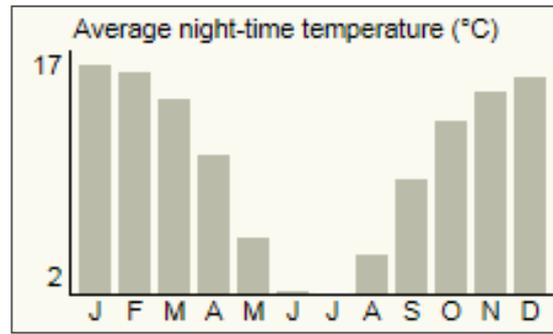


Figure 12:2: Average night-time temperature per month for Rustenburg (source: http://www.saexplorer.co.za/south-africa/climate/rustenburg_climate.asp)

12.2.2 Rainfall

The Mean Annual Precipitation for Rustenburg ranges between 500-600 mm per year, with most rainfall occurring during mid-summer. The table and graph below show the average rainfall values for Rustenburg per month with the lowest rainfall in June, July and August (during the winter months) and the highest in January.

Table 12:2 Average rainfall per month (mm)

Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
101	80	75	29	6	0	0	0	7	40	80	95

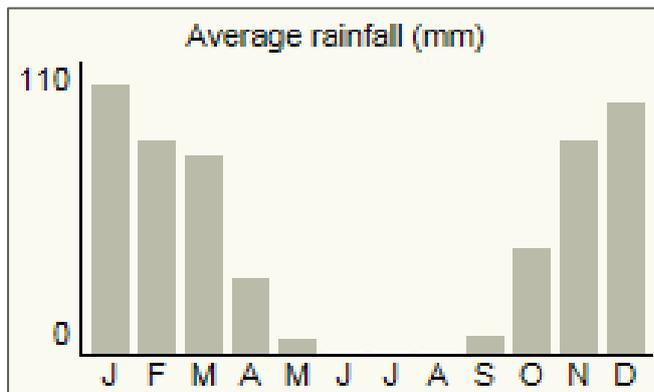


Figure 12:3 Average rainfall per Month in Rustenburg (source: http://www.saexplorer.co.za/south-africa/climate/rustenburg_climate.asp)

12.2.3 Extreme weather conditions

Incidence of extreme weather conditions recorded at Rustenburg weather station (number 05115234) are frost, hail, drought, and high winds. Hail can be expected on an average 4 times a year. The rainfall is somewhat unreliable and in about 12% of all years rather severe drought conditions occur. The incidence of high winds is low. Frost can occur during cold winters when temperatures drop below 0°C.

12.2.4 Evaporation

The closest, reliable evaporation station is situated at Kroondal (WB station A2E08). The average monthly values for evaporation are presented in Table 12:3 below. The values show that a net water loss prevails in the region.

Table 12:3 Evaporation data for Rustenburg region

Month	Evaporation (mm)	
	A-pan	S-pan
January	225	184
February	189	151
March	187	149
April	148	112
May	129	95
June	113	80
July	123	90
August	154	119
September	192	154
October	215	175
November	213	173
December	223	182
Total	2 110	1 663

A correlation exists between the temperatures and the evaporation rate, therefore the highest temperatures and evaporation occurs during the summer.

12.2.5 Wind direction and speed

The wind data for Rustenburg shows that the prevailing wind directions are north-east (2.5 m.s^{-1}) for the months January to April, south-west (2.5 m.s^{-1}) for May to September and north-west (2.3 m.s^{-1}) for October to December.

Table 12:4 Average wind data for Rustenburg

	N	NE	E	SE	S	SW	W	NW
%	0.0	23.0	16.0	4.0	9.0	6.0	10.0	32.0
Speed	0.0	2.5	2.2	2.2	2.4	2.5	2.5	2.3

12.3 Geology

The Waterval Mine and environs are underlain by layered sequence of mafic rocks, referred to as the Rustenburg Layered Suite of the Bushveld Igneous Complex. The suite was emplaced near the top of the older, predominantly sedimentary Transvaal Supergroup. Quartzite and shales (Magaliesberg Formation) of the Transvaal Supergroup form the floor rocks of the Bushveld Complex and build the prominent range of hills immediately west and to the south of Rustenburg. Norites, which form the Chill Zone of the Complex lie in contact with metamorphosed quartzite and shales and are overlain in the vicinity of Rustenburg and to the south and south east of Rustenburg by a sequence of bronzites and minor hartzburgites. These form the Basal Zone of the Complex.

The succeeding Critical Zone rocks are of more varied composition and contain economically important layers which are mined for their chrome and platinum group metals (“PGM”). A prominent pyroxinite layer which contains the economically important Merensky Reef mined for its PGM to the north of the former Rustenburg Chrome mine, marks the top of the Critical Zone. A thick sequence of gabbro-norite assigned to the Main Zone of the Bushveld Complex overlies the Merensky Reef to the north and north east of Rustenburg.

Chrome ore is mined and occurs as layers in the host rock pyroxenite, in the lower critical zone of the Bushveld Igneous Complex. The Bushveld Complex occurs as younger intruded series into the older Transvaal Sequence sediments as an elliptical basin shaped layered mass, outcropping 61 000 km². The Bushveld Complex is a layered mafic to ultramafic sequence and granitic units. The mafic to ultra-mafic layered sequence, the Rustenburg Layered Suite, is a younger intruded series and is part of the Bushveld Complex.

The Suite is subdivided into 5 zones:

- Upper zone;
- Main zone;
- Critical zone;
- Lower zone; and
- Marginal zone.

Chromitite is present in chromitite seams in the lower part of the Rustenburg Layered suite in the northern and south eastern belts as well as in the western lobe. The chromitite layers are confined to the critical zone and were grouped from the bottom upwards, into lower, middle and upper groups.

12.4 Soils

The south-eastern portion of Waterval Mine comprises deep soils that are predominantly reddish with light textured (15-20% clay) A horizons and medium textured (20-25% clay) B horizons (Institute of Soil, Climate and Water, 2007). The central zone predominantly consists of shallow duplex soils, having light textured A horizons on strong textured (30% or more clay) B horizons with varying degrees of wetness in the underlying horizons. The rest of the area has moderately deep, light textured soils with a zone on the northern boundary comprising a shallow, heavy textured B horizon that is wet for the better part of the year. The analysis results show the medium texture of the soils, as well as the neutral pH and low degree of leaching. The evidence of previous fertilization is the higher level of P in the topsoil horizons.

12.5 Terrestrial biodiversity

Glencore: Waterval Mine falls within Mucina & Rutherford's (2006) Moot Plains Bushveld (SVcb8) and Marikana Thornveld (SVcb6) vegetation types. The Moot Plains Bushveld ("MPB") is an open to closed, low, often thorny savanna dominated by various species of *Acacia* in the bottomlands and plains as well as woodlands of varying height and density of the lower hillsides. The Marikana Thornveld (MT) extends over North West and Limpopo Provinces, occurring on the plains from the Rustenburg area in the west, through Marikana and Brits, to the Pretoria area in the east, and forms part of the Savanna Biome³ in South Africa. MT consists of open *Acacia* karoo-dominated woodland, occurring in valleys and slightly undulating plains, and some lowland hills. An increased density of shrubs (and often alien vegetation) occurs along drainage lines, on termitaria, and rocky outcrops or other habitats protected from fire (Mucina & Rutherford, 2006).

12.6 Surface water

12.6.1 Catchment and general hydrology

Waterval Mine falls within the Sandspruit Catchment (A22H Quaternary Catchment of the Crocodile (West) Marico Water Management Area (WMA) 3, that is part of the Elands Sub-management area.

The only stream in the immediate vicinity of the mine is a small non-perennial tributary to the Hex River, which flows in a north easterly direction between Waterval East and old Waterval sections. The only perennial watercourse in the area is the Hex River. The Hex River (situated approximately 1km and 700m from Waterval Mine West and Waterval Mine East, respectively, flows north-westwards into the Elands River and further downstream into the Crocodile River (sub-drainage region A2). The Crocodile River flows north-westwards into the Marico River and becomes the Limpopo River at their confluence.

12.7 Groundwater

12.7.1 Geohydrology

The geohydrology of the site associated with Waterval Mine is that of an intergranular and fractured aquifer type, namely the Rustenburg layered suite to the north of the Magaliesberg. Groundwater occurrence is associated mainly with deeply weathered and fractured mafic rocks. More than 80% of the boreholes yield less than 2l/s. This is a result of the low permeability ($\pm 10^{-6}$ cm/s) of the clay rich soils (i.e. black turf soils) that reduce recharge to underlying aquifers. The depth to groundwater rest level typically occurs between 5m and 40m below surface. The mean water quality for this aquifer type shows that salinity can be a problem in these aquifers (average EC values of 105mS/m).

12.7.2 Aquifer classification and description

There is groundwater recharge of 992.77 Ml/year, calculated as a recharge of rainfall at 3% per year to the groundwater system.

The area is underlain by geological formations which have a low permeability. Groundwater therefore moves slowly. The area is very flat (low gradient) which further causes the groundwater to move more slowly.

³ The Savanna biome covers the northern and eastern parts of South Africa where a continuously shifting balance occurs between the woody and herbaceous vegetation.

12.8 Air Quality

Air quality in the Rustenburg area is generally poor, a problem which is intensified by the local topography and climatic conditions. Major contributors to air pollution in the area include mine tailings, scheduled processes, domestic fuel burning, transportation, landfills, smaller industrial sources, agriculture and other sources.

Dust monitoring points were established to be sufficient in number to establish the contribution of the mine to dust fall in residential and non-residential areas in the vicinity of the premises, to monitor identified or likely sensitive receptor locations, and to establish the baseline dust fall for the district.

The following aspects were taken in consideration:

- The prevailing winds of that specific area – light to moderate and from the north-east direction in summer and from the north-east to north-west direction in winter;
- The windy season – August – October;
- The locality of the site;
- The size of the site – ha; and
- Areas where the most dust is visible.

12.9 Noise

An environmental noise monitoring survey was conducted for the Waterval West Mine in July 2012 by Ashreq Environmental and Occupational Hygiene Consultants. The environmental noise survey was conducted according to the following legal requirements and associated standards: SANS 10103:2003, the Code of Practice for The Measurement and Rating of Environmental Noise with Respect to Land Use, Health, Annoyance and Speech Communication.

The main sources of noise may be attributed to the processing activities at the plant (including a surface fan) and intermittent vehicles passing on the main roads.

The results of day and night-time levels measured during the survey were as follows:

- Day Time LAeq: 51dBA (-19).
- Night-Time LAeq: 49dBA (-11).

It was concluded that both the day and night time levels were well below the noise control limits as set out in SANS 10103:2003. Both levels were similar to that of levels obtained in the summer.

12.10 Heritage

A Phase I Heritage Impact Assessment was undertaken for the Waterval Chrome Mine in 2010. Areas to the north and to the south of the mine have been surveyed by the author in the past. Numerous sites have been recorded and at least twenty sites have been excavated. The Phase I HIA study for the Waterval Chrome Mine revealed none of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).

12.11 Social

Waterval Mine falls within the jurisdiction of the Bojanala District Municipality and the Rustenburg Local Municipality. Rustenburg Local Municipality is one of five municipalities within the Bojanala District Municipality in the North West Province and is divided into 38 wards. The significant growth in Rustenburg is largely attributed to the impact of the world's four largest mines in the immediate vicinity of the town, namely, Anglo American Platinum, Impala Platinum, Xstrata (Glencore) and Sibanye-Stillwater. The mining sector providing around 50% of all formal employment.

12.11.1 Population

With 719 000 people, the Rustenburg Local Municipality housed 1.2% of South Africa's total population in 2020. Between 2010 and 2020 the population growth averaged 3.03% per annum which is about double than the growth rate of South Africa as a whole (1.59%). Compared to Bojanala Platinum's average annual growth rate (2.42%), the growth rate in Rustenburg's population at 3.03% was slightly higher than that of the district municipality (RLM IDP, 2022).

In 2020, the Rustenburg Local Municipality's population consisted of 90.32% African (649 000), 7.65% White (55 000), 0.92% Coloured (6 630) and 1.11% Asian (8 000) people. The largest share of population is within the young working age (25-44 years) age category with a total number of 299 000 or 41.6% of the total population. The age category with the second largest number of people is the babies and kids (0-14 years) age category with a total share of 23.4%, followed by the older working age (45-64 years) age category with 122 000 people. The age category with the least number of people is the retired / old age (65 years and older) age category with only 26 700 people (RLM IDP, 2022).

12.11.2 Education

Within Rustenburg Local Municipality, the number of people without any schooling decreased from 2010 to 2020 with an average annual rate of -1.43%, while the number of people within the 'matric only' category, increased from 108,000 to 178,000. The number of people with 'matric and a certificate/diploma' increased with an average annual rate of 5.43%, with the number of people with a 'matric and a Bachelor's' degree increasing with an average annual rate of 5.59%. Overall improvement in the level of education is visible with an increase in the number of people with 'matric' or higher education (RLM IDP, 2022).

12.11.3 Unemployment

In 2020, there were a total number of 94 600 people unemployed in Rustenburg, which is an increase of 43 300 from 51 300 in 2010. The total number of unemployed people within Rustenburg constitutes 38.41% of the total number of unemployed people in Bojanala Platinum District Municipality. The Rustenburg Local Municipality experienced an average annual increase of 6.31% in the number of unemployed people, which is worse than that of the Bojanala Platinum District Municipality which had an average annual increase in unemployment of 5.29% (RLM IDP, 2022).

12.11.4 Household infrastructure

Rustenburg Local Municipality had a total number of 74 400 (30.13% of total households) very formal dwelling units, a total of 109 000 (44.26% of total households) formal dwelling units and a total number of 39 400 (15.95% of total households) informal dwelling units (RLM IDP, 2022).

12.11.5 Sanitation

Rustenburg Local Municipality had a total number of 153 000 flush toilets (61.92% of total households), 29 700 Ventilation Improved Pit (VIP) (12.02% of total households) and 57 900 (23.47%) of total households pit toilets (RLM IDP, 2022).

12.11.6 Access to water

Rustenburg Local Municipality had a total number of 76 800 (or 31.14%) households with piped water inside the dwelling, a total of 130 000 (52.66%) households had piped water inside the yard and a total number of 1 700 (0.69%) households had no formal piped water (RLM IDP, 2022).

12.11.7 Electricity

Rustenburg Local Municipality had a total number of 2 300 (0.93%) households with electricity for lighting only, a total of 212 000 (86.06%) households had electricity for lighting and other purposes and a total number of 32 100 (13.01%) households did not use electricity (RLM IDP, 2022).

12.11.8 Refuse removal

Rustenburg Local Municipality had a total number of 179 000 (72.44%) households which had their refuse removed weekly by the authority, a total of 8 640 (3.50%) households had their refuse removed less often than weekly by the authority and a total number of 19 000 (7.71%) households which had to remove their refuse personally (own dump) (RLM IDP, 2022).

12.11.9 Local Economic Development Opportunities

The following sub-section provides an overview of the opportunities identified within the RLM. The opportunities are identified within their ability to develop the economy of the local municipality and improve the socio-economic conditions of residents within the municipality. This sub-section covers the following economic sectors:

- Agriculture;
- Mining;
- Manufacturing;
- Utilities;
- Trade;
- Transport, Storage and Communication;
- Finance;
- Community and Personal services;
- General Government Services; and
- Tourism.

13 Description of the current land uses

The majority of the surrounding land use is either arable or mining. Rustenburg town is situated 3km to the east of Waterval Mine and Kroondal 5km to the west (Shangoni, 2021).

The predominant pre-mining land use was natural grassland. Land on Waterval-West could have been used for arable land due to the present vegetation occurring on the land. Most of the present land uses are mine related quarries, discard dumps, tailings storage facilities, water retention dams, soils and waste rock stockpiles and shafts (Shangoni, 2021).

According to the 2009 SANBI land cover data the Farm Waterval has a number of classifications. It is classified as mining in the south-east, as urban built-up in the north-west and the remainder as a mix of natural and cultivated land (Figure 13:1). Waterval is discussed in this section as Waterval West, Waterval East and Waterval North (rehabilitated area north of Waterval Mine and Offices).

Operations take place in two separate areas to the west (ca. 21 ha) and east (ca. 24 ha). Infrastructure within the operational areas include an office block (Glencore Alloy's head-office), mine training facilities, engineering and environmental offices, two Tailings Storage Facilities (TSFs), two Return Water Dams (RWDs), two explosive storage areas and two shaft complex sections as well as chrome and waste rock stockpiles. The perennial Hex River flows to the north east of the non-operational area, which has been subject to past mining, stockpiling and cultivation practices. Parts of this area especially along the Hex River are currently used as motorcycle track

while other areas are used for dumping of building waste. Current land uses on and surrounding the site are summarised in Table 13:1.



Figure 13:1 Positioning of Waterval East, West and North (Shangoni, 2021)

Table 13:1 Current land uses for the site associated with Waterval Mine and surrounds (Shangoni, 2021)

Direction	Land use	Fragmentation
The study site (Waterval Mine)	Chrome mining, processing and stockpiling. Waste dumping and motorcycle track.	Land in and amongst operations is highly fragmented and degraded, some viable habitat remains in the gardens around the main office block. Outside this area is a large (ca. 105 ha) undeveloped stretch of rehabilitated fallow land that connects to a 770 m reach of the Hex River which provides important corridor for biodiversity
Eastwards	Cultivation and natural.	Open land along Hex River, mostly cultivated but some natural areas remain. Extends for about 2.4 km to the start of the Waterkloof settlement.
South	Residential, Waterval East	Highly fragmented almost all natural habitat has been transformed.

Direction	Land use	Fragmentation
Westwards	Industrial, Rustenburg	Highly fragmented almost all natural habitat has been transformed.
North	Mining and tailings (Anglo Platinum) and past cultivation	Fair amount of open fallow and natural land remains but fragmented by several tar roads, railway lines and mines.

14 Description of the specific environmental features and infrastructure on site

As described in the baseline and the current land use sections above, the major environmental features of the proposed UG1 opencast project area are as follows:

- Hex River;
- Wetland areas (including riparian areas)
- Riparian areas

Existing infrastructure includes the R24 provincial road to the North West of the proposed UG1 opencast project, and the D108 road to north east of the proposed project.

15 Environmental and current land use map

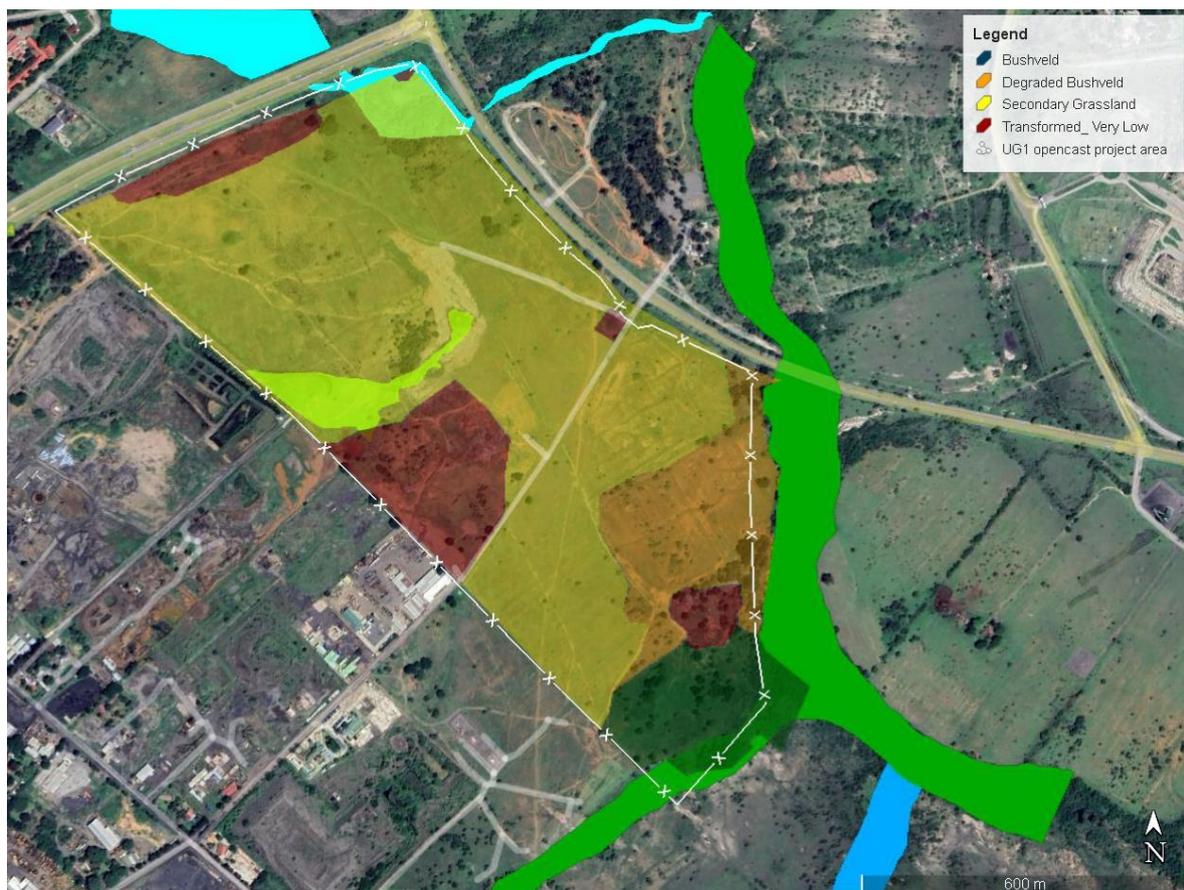


Figure 15:1 Environmental and current land use map

16 Impacts identified

Table 16:1 describes high level potential impacts identified for the UG1 opencast project and associated activities. Preliminary significance ratings (prior to the implementation of mitigation measures) have been assigned. These potential impacts will be further investigated during the impact assessment phase, using impact rating methodology provided in Chapter 17.

Table 16:1 High level potential impacts identified for the UG1 opencast project

Activity	Potential impact	Significance	Probability	Duration
Construction of boxcut and related surface infrastructure	Loss of vegetation and consequently loss of habitat for fauna during site clearing and site establishment	Low (-)	Definite	Medium- term
	Loss of soils as a resource due to topsoil stripping and stockpiling	Medium (-)	Definite	Medium- term
	Impact on delineated wetlands	Medium (-)	Possible	Medium-term
	Pollution of surface water resources	Low (-)	Possible	Medium- term
	Pollution of groundwater resources	Low (-)	Possible	Medium- term
	Increase of nuisance dust due to site clearing, removal stockpiling of topsoil	Medium (-)	Definite	Medium- term
	Increase in ambient noise levels. General rise in ambient noise levels during construction activities	Medium (-)	Definite	Medium- term
	Impact on heritage resources	Low (-)	Possible	Medium-term
	Spontaneous settlement due to perceived employment	Medium (-)	Possible	Medium- term
	Benefits resulting from employment and income opportunities created by the construction of the pipelines	Low (+)	Possible	Short term
	Influx of people and construction workers leading to increased pressure on social services and infrastructure, social pathologies and disruptions, resulting in spontaneous settlements	Low (-)	Possible	Medium-term
	Dissatisfaction over employment opportunities and conditions of procurement which could potentially lead to community protests and unrests, as well as conflicts within communities	Medium (-)	Possible	Medium-term
		Alteration to the local topography due to opencast	High (-)	Definite

Activity	Potential impact	Significance	Probability	Duration
Operation of opencast mining activities	mining activities and related infrastructure			
	Pollution of surface water resources	Medium (-)	Definite	Medium-term
	Dewatering of mining area	Medium (-)	Definite	Medium-term
	Reduced groundwater quality/contamination	Medium (-)	Definite	Medium-term
	Increase of nuisance dust due to opencast mining activities	High (-)	Definite	Medium- term
	Increase in ambient noise levels. General rise in ambient noise levels during open cast mining activities	Medium (-)	Definite	Medium- term
	Air Blast	Medium (-)	Medium Probability	Short term
	Fly rock	High (-)	Medium Probability	Short term
	Employee health and safety	Medium (-)	Medium Probability	Short term
	Benefits resulting from employment and income opportunities created by the opencast project	Medium (+)	Definite	Medium-term
	Influx of people and potential mine workers leading to increased pressure on social services and infrastructure, social pathologies and disruptions, resulting in spontaneous settlements	Low (-)	Possible	Medium-term
	Dissatisfaction over employment opportunities and conditions of procurement which could potentially lead to community protests and unrests, as well as conflicts within communities	Medium (-)	Possible	Medium-term

17 Methodology used in determining the significance of the environmental impacts

17.1 Impact assessment methodology

The significance of the identified impacts will be determined using an accepted methodology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998. As with all impact methodologies, the impact is defined in a semi-quantitative way and will be assessed according to methodology prescribed in the following section.

Table 17:1 Scale utilised for the evaluation of the Environmental Risk Ratings

Evaluation Component	Rating Scale and Description/criteria
MAGNITUDE of negative impact (at the indicated spatial scale)	10 - Very high: Bio-physical and/or social functions and/or processes might be <i>severely</i> altered. 8 - High: Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered. 6 - Medium: Bio-physical and/or social functions and/or processes might be <i>notably</i> altered. 4 - Low : Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered. 2 - Very Low: Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered. 0 - Zero: Bio-physical and/or social functions and/or processes will remain <i>unaltered</i>
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	10 - Very high (positive): Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced. 8 - High (positive): Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced. 6 - Medium (positive): Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced. 4 - Low (positive): Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced. 2 - Very Low (positive): Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced. 0 - Zero (positive): Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
DURATION	5 - Permanent 4 - Long term: Impact ceases after operational phase/life of the activity > 20 years. 3 - Medium term: Impact might occur during the operational phase/life of the activity – 20 years. 2 - Short term: Impact might occur during the construction phase - < 3 years. 1 - Immediate
EXTENT (or spatial scale/influence of impact)	5 - International: Beyond National boundaries. 4 - National: Beyond Provincial boundaries and within National boundaries. 3 - Regional: Beyond 5 km of the proposed development and within Provincial boundaries. 2 - Local: Within 5 km of the proposed development. 1 - Site-specific: On site or within 100 m of the site boundary. 0 - None
IRREPLACEABLE loss of resources	5 – Definite loss of irreplaceable resources. 4 – High potential for loss of irreplaceable resources. 3 – Moderate potential for loss of irreplaceable resources. 2 – Low potential for loss of irreplaceable resources. 1 – Very low potential for loss of irreplaceable resources. 0 - None
REVERSIBILITY of impact	5 – Impact cannot be reversed. 4 – Low potential that impact might be reversed. 3 – Moderate potential that impact might be reversed. 2 – High potential that impact might be reversed. 1 – Impact will be reversible. 0 – No impact.
PROBABILITY (of occurrence)	5 - Definite: >95% chance of the potential impact occurring. 4 - High probability: 75% - 95% chance of the potential impact occurring. 3 - Medium probability: 25% - 75% chance of the potential impact occurring 2 - Low probability: 5% - 25% chance of the potential impact occurring. 1 - Improbable: <5% chance of the potential impact occurring.

Evaluation Component	Rating Scale and Description/criteria
CUMULATIVE impacts	<p>High: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Medium: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Low: The activity is localised and might have a negligible cumulative impact.</p> <p>None: No cumulative impact on the environment.</p>

Once the Environmental Risk Ratings have been evaluated for each potential environmental impact, the Significance Score of each potential environmental impact is calculated by using the following formula:

- **SS (Significance Score) = (magnitude + duration + extent + irreplaceable + reversibility) x probability.**

The maximum Significance Score value is 150.

The Significance Score is then used to rate the Environmental Significance of each potential environmental impact as per Table 17:2 below. The Environmental Significance rating process is completed for all identified potential environmental impacts both before and after implementation of the recommended mitigation measures.

Table 17:2 Scale used for the evaluation of the Environmental Significance Ratings

Significance Score	Environmental Significance	Description/criteria
125 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked
40 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project

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

The following provides a summary of the advantages and disadvantages of the proposed site/layout.

Advantages

- The proposed UG1 opencast project falls within Glencore Waterval Mine’s approved mining right area;
- The chrome resource has already been quantified;

- The project will ensure on-going mining and safeguard that Waterval Mine remains operational;
- Limited environmental impacts as the area have already been disturbed by historic farming practices;
- Low faunal and floral diversity as the area is within the mining right area and has already been historically impacted;
- Waterval Mine will retain current direct employment;
- With the implementation of the roll-over method of mining, concurrent rehabilitation will be implemented allowing the area to be returned to its natural pre-mining state as far as possible.

Disadvantages

- Potentially pit dewatering will be required;
- LOM is planned to be in the order of only +/-3 years;
- Increased noise and dust impact that will require management such as dust suppression;
- Potential long term impacts on groundwater quality i.e., post closure;
- Visual impacts i.e., height of overburden stockpiles, night lighting etc);
- Impacts of blasting on neighbouring properties and businesses.

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

Every potential impact identified during the impact assessment phase of the environmental authorisation process will be evaluated in terms of the impact assessment methodology described in Section 17.1. The results of the impact assessment will be compiled in the EIA and EMPr. Each potential impact identified will have mitigation measures assigned to it, whether the significance of the potential impact is high or low. In addition, a post-mitigation assessment of the significance of the impact will also be completed, which will provide an indication of the effectiveness of the proposed mitigation measure.

High level mitigation measures for potential impacts identified during the scoping phase is provided in Table 21:1.

17.4 The Final Site Layout Plan

Refer to Figure 5:1 for the final site layout plan.

17.5 Motivation where no alternative sites were considered

Alternatives were considered and are discussed in Section 10 of this Draft Scoping Report.

17.6 Statement motivating the preferred site

The property for the preferred location has been selected as it is located within Glencore's existing mining right area on property owned by Glencore (remaining extent of Portion 82 of the farm Waterval 306 JQ).

The preferred location has also been constrained due to the location of the mineral resource and proven reserve, the shallowness of the reserve as well as the location of the site in relation to the Waterval West processing plant. The proposed location of the UG1 opencast project will allow Waterval Mine to continue with processing of ore at its existing Waterval West plant.

18 Plan of study for the Environmental Impact Assessment process

18.1 Description of alternatives to be considered including the option of not going ahead with the activity

Refer to Section 10 for alternatives considered.

18.2 Description of the aspects to be assessed as part of the environmental impact assessment process

In accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of NEMA, a Site Sensitivity Verification has been compiled to provide a rationale for the specialist studies undertaken as part of the environmental authorisation process. This section addresses the findings of the Screening Tool Report (Appendix C), generated from the National Web Based Environmental Screening Tool, and provides a motivation for the various specialist studies identified to be conducted.

As per the Screening Tool Report, the proposed site is located within the following areas of sensitivity:

- Archaeological and Cultural Heritage Theme: Low sensitivity;
- Civil Aviation Theme: High sensitivity;
- Defence Theme: Low sensitivity;
- Plant Species Theme: Low sensitivity

Other than the specialist studies that have been commissioned and the impacts identified and assessed, the other specialist studies suggested by the Screening Tool Report are not considered as required for this study. A motivation is provided in Table 18:1.

Table 18:1 Specialist studies required as per the Screening Tool Report and relevant motivations

Specialist study	Undertaken/not undertaken	Motivation
Agricultural Impact Assessment	Undertaken	Undertaken, refer to Table 18:2
Landscape/Visual Impact Assessment	Undertaken	Undertaken, refer to Table 18:2

Specialist study	Undertaken/not undertaken	Motivation
Archaeological and Cultural Heritage Impact Assessment	Undertaken	Undertaken, refer to Table 18:2
Palaeontology Impact Assessment	Not undertaken	Based on the SAHRA sensitivity map the area is of insignificant paleontological sensitivity and no further palaeontological studies are required.
Terrestrial Biodiversity Impact Assessment	Undertaken	Undertaken, refer to Table 18:2
Aquatic Biodiversity Impact Assessment	Undertaken	Undertaken, refer to Table 18:2
Noise Impact Assessment	Undertaken	Undertaken, refer to Table 18:2
Radioactivity Impact Assessment	Not undertaken	A radioactivity impact assessment is not required as the material being mined (chromite) is not considered radioactive.
Traffic Impact Assessment	Not undertaken	A dedicated haul road for excavated material will be utilised for transporting material to the processing plant.
Geotechnical Assessment	Undertaken	Undertaken, refer to Table 18:2
Climate Impact Assessment	Not undertaken	A specific Climate Impact Assessment will not be undertaken, but the climate will be assessed in the Air Quality Impact Assessment, and flood events will be assessed as part of the Hydrology Assessment.
Health Impact Assessment	Not undertaken	A specific Health Impact Assessment is not required at this stage as Air Quality and Noise impact assessments are undertaken
Socio-Economic Assessment	Not undertaken	The positive and negative socio-economic impacts of the UG1 opencast project will be assessed as part of the EIA/EMPr. It is not deemed necessary that a separate Socio-Economic Assessment be undertaken at this time.
Ambient Air Quality Impact Assessment	Undertaken	Undertaken, refer to Table 18:2
Seismicity Assessment	Undertaken	A Blasting Impact Assessment is undertaken, refer to Table 18:2
Plant Species Assessment	Undertaken	To be included as part of the Vegetation compliance statement.

18.3 Description of aspects to be assessed by specialists

A team of specialists has been appointed to undertake various specialist investigations. Specialist studies will be undertaken as part of the impact assessment phase of the integrated environmental authorisation process associated with the project. The specialist studies will investigate the baseline environment, potential impacts and provide management measures for incorporation into the Waterval's current approved EMPr. The specialist studies will also take into consideration the inputs and recommendations provided from stakeholders obtained

through the public participation process. Table 18:2 outlines the specialist studies and the associated scope of work that will be undertaken for the project.

Table 18:2 Specialist studies to be undertaken for the Waterval UG1 opencast project

Specialist study, company and contact person	Scope of work
Groundwater assessment <i>Geostratum Water Management Consultants</i> Kobus Troskie	<ul style="list-style-type: none"> • Hydrocensus • Geophysical investigation • Supervision of installation of monitoring boreholes • Aquifer testing of the newly drilled boreholes • Laboratory testing of groundwater samples • Waste characterisation <ul style="list-style-type: none"> ○ Weathered material ○ Overburden (waste rock) ○ Ore ○ Floor material • Groundwater impact assessment • Numerical flow model • Reporting
Surface water study <i>Hydrological Environmental Engineering Solutions (HEES)</i> Deon van der Merwe	<ul style="list-style-type: none"> • Surface hydrology investigation • Stormwater management plan • Surface water impact assessment
Agricultural compliance statement <i>The Biodiversity Company</i> Andrew Husted	<ul style="list-style-type: none"> • Determination of land capability and agricultural potential • Land use identification
Vegetation compliance statement <i>The Biodiversity Company</i> Andrew Husted	<ul style="list-style-type: none"> • Plants and vegetation survey
Freshwater assessment <i>The Biodiversity Company</i> Andrew Husted	<ul style="list-style-type: none"> • Wetland delineation • Determination of buffer zones • Risk assessment
Air quality <i>uMoya-NILU Consulting</i> Dr Mark Zunckel	<ul style="list-style-type: none"> • Emission inventory • Total suspended particles (TSP), PM₁₀, PM_{2.5} and dust fallout dispersion model • Air quality impact assessment
Noise assessment <i>dBAcoustics</i> Barend van der Merwe	<ul style="list-style-type: none"> • Determine the mine boundaries and noise sensitive areas • Day and night-time noise surveys • Daytime vibration monitoring • Analysis of the results • Noise impact assessment and report writing • Noise modelling

Specialist study, company and contact person	Scope of work
Blast impact <i>Blast Management & Consulting</i> Danie Zeeman	<ul style="list-style-type: none"> • Site review and information capture • Modelling • Report including: <ul style="list-style-type: none"> ○ Ground vibration explanation, ○ Airblast explanation, ○ Fly-rock ○ Impact assessment
Heritage impact assessment <i>Beyond Heritage</i> Jaco van der Walt	<ul style="list-style-type: none"> • Background and desktop study • Physical survey • Reporting and heritage impact assessment
Visual impact assessment <i>Scientific Aquatic Services</i> Sanja Erwee	<ul style="list-style-type: none"> • Field assessment • Viewshed and sensitive receptors • Visual impact assessment
Closure Plan and financial provision <i>Hydrological Environmental Engineering Solutions (HEES)</i> Deon van der Merwe	<ul style="list-style-type: none"> • Annual rehabilitation plan • Final rehabilitation plan • Financial provision

18.4 Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The EIA will be undertaken according to the impact assessment methodology described in Section 17.1 of this Draft Scoping Report.

18.5 The proposed method of assessing duration significance

Duration significance of impacts will be assessed using the following criteria, where the duration of time related to how long that impact will occur for during that phase of the project. Specific durations will be allocated to each project phase in the EIA/EMPr document where the detailed impact assessment rating will be undertaken.

- **Permanent**
- **Long term:** Impact ceases after operational phase/life of the activity > 20 years.
- **Medium term:** Impact might occur during the operational phase/life of the activity – 20 years.
- **Short term:** Impact might occur during the life of the activity - < 3 years.
- **Immediate**

19 The stages at which the competent authority will be consulted

The competent authority is the North West Department of Mineral Resources and Energy (DMRE). The DMRE will be consulted through all phases of the environmental authorisation process. This includes:

- Pre-application meeting: 24 June 2022
- Announcement and scoping phase: From July 2022
- Impact assessment phase: From October 2022

20 Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

20.1 Steps to be taken to notify interested and affected parties

The following steps have been taken to notify Interested and Affected Parties (I&APS) of the proposed UG1 opencast project:

- Distribution of Background Information Documents (BID) (refer to Appendix B4 for a copy of the BID and Appendix B5 for distribution emails);
- Placement of site notices (in English and Setswana) around the proposed project area (Appendix B3); and
- Advertisement (in English) in the Rustenburg Herald and Platinum Weekly. Refer to Appendix B6 for a copy of the advertisements.

20.2 Details of the engagement process to be followed

Refer to Section 11.2

20.3 Description of the information to be provided to Interested and Affected Parties

The following information will be provided to I&APs throughout the S&EIR environmental authorisation process:

- Project description (including layout and alternatives investigated);
- Status quo of the baseline environment;
- Findings from the specialist studies;
- Identified impacts on the biophysical and social environment during all phases of the project (construction, operation and closure);
- Proposed mitigation measures to address the identified impacts;
- Details on the closure objectives, closure plan and financial provision; and
- Information on ways I&APs can comment on the project and associated report.

20.4 Description of the tasks that will be undertaken during the environmental impact assessment process

The following activities will be undertaken as part of the S&EIR environmental authorisation process:

- Undertaking of several specialist studies for the activities and associated infrastructure of the proposed UG1 opencast project;
- Undertake the environmental impact assessment as per the impact assessment methodology described in Section 17.1;
- Compilation of an EMPr in order to avoid/mitigate potential impacts identified;
- Provide I&APs feedback on the findings of the impact assessment by making the Draft EIA/EMPr available for public comment;
- Provide I&APs, commenting authorities and the competent authority the opportunity to comment on the Draft EIA/EMPr document for a period of 30 days;
- Submit the Final EIA/EMPr to the competent authority for decision making;
- Notify I&APs of the decision made by the competent authority.

21 Measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

Table 21:1 lists the anticipated impacts identified for the proposed UG1 opencast project during the Scoping Phase. These mitigation measures will aim to avoid, reverse mitigate or management anticipated impacts.

Table 21:1 Potential mitigation measures for anticipated impacts identified during the Scoping phase

Activity	Potential impact	Proposed mitigation measures
Construction of boxcut and related surface infrastructure	Loss of vegetation and consequently loss of habitat for fauna during site clearing and site establishment	<ul style="list-style-type: none"> • Limit area of vegetation clearance to as small a footprint as possible • Demarcate footprint of infrastructure areas and restrict vegetation clearance to these areas only. • Avoid vegetation clearance of ecologically sensitive areas • Implement an alien invasive plant species management plan
	Loss of soils as a resource due to topsoil stripping and stockpiling	<ul style="list-style-type: none"> • Strip topsoil after vegetation clearance and stockpile for use during rehabilitation • Management of the topsoil stockpile to preserve the seedbed. • Ensure the presence of sufficient emergency spill kits;
	Impact on delineated wetlands	<ul style="list-style-type: none"> • Avoid placement of surface infrastructure in delineated wetlands as far as possible • Develop and implement a construction stormwater management plan prior to the commencement of site clearing activities;
	Pollution of surface water resources	<ul style="list-style-type: none"> • Implement a stormwater management plan, ensure clean and dirty water separation. • Servicing of construction vehicles will take place only in dedicated areas that are equipped with drip trays; • Collect the water arising within any dirty area, including water seeping from mining operations, outcrops or any other activity, into a dirty water system; • Implement and maintain surface water monitoring programme;
	Pollution of groundwater resources	<ul style="list-style-type: none"> • Surface water management measures, such as storm water canals, sediment traps and PCDs are to be constructed first to ensure that runoff and dirty water spills are contained;
	Increase of nuisance dust due to site clearing, removal stockpiling of topsoil	<ul style="list-style-type: none"> • Implement and maintain dust suppression on dirt roads and areas of potential risk; • Implement and maintain dust monitoring (and adjust dust suppression accordingly);

Activity	Potential impact	Proposed mitigation measures
		<ul style="list-style-type: none"> • Issue masks as part of PPE to persons working within areas of risk; • Implement and maintain a speed limit on all internal/haul roads.
	Increase in ambient noise levels. General rise in ambient noise levels during construction activities	<ul style="list-style-type: none"> • Develop and implement a vehicle and equipment maintenance plan; • Develop and implement a noise monitoring program; • Implement appropriate Personal Protective Equipment (PPE) in working areas with elevated noise levels; • Develop and implement noise grievance procedure.
	Spontaneous settlement due to perceived employment	<ul style="list-style-type: none"> • Develop a clear and concise employment and recruitment policy that prioritizes local recruitment. Ensure that contractors adhere to this policy. • Through the stakeholder engagement process ensure that expectations are managed around employment opportunities and practices. • Monitor and implement the Grievance Management Mechanism. • Involve Local Ward Councillors and keep them informed about project developments and included in all stakeholder engagement processes. Their involvement will assist with the successful development of relationships between the Glencore, the municipality and the communities.
Operation of opencast mining activities	Alteration to the local topography due to opencast mining activities and related infrastructure	<ul style="list-style-type: none"> • Concurrent rehabilitation • Backfilling of overburden material • Infilling or fencing of void
	Pollution of surface water resources	<ul style="list-style-type: none"> • Design, construct and maintain effective clean and dirty water separation systems on site as to allow clean water to leave the site as clean without being contained or contaminated; • Establish, implement and maintain a site specific storm water management plan.
	Dewatering of mining area	<ul style="list-style-type: none"> • Develop and maintain a site-specific water balance; • Insert flow meters; • Implement a site specific ground water monitoring programme inclusive of ground water levels; • Re-use and recycle water as far as practicably possible to reduce raw water intake; • Opencast pit to be rehabilitated to pre-mining state;

Activity	Potential impact	Proposed mitigation measures
		<ul style="list-style-type: none"> Maintain ground water monitoring programme, inclusive of ground water levels, post closure until it can be proven that it is no longer necessary.
	Increase of nuisance dust due to opencast mining activities	<ul style="list-style-type: none"> Implement and maintain dust suppression on dirt roads and areas of potential risk; Implement and maintain dust monitoring (and adjust dust suppression accordingly); Issue masks as part of PPE to persons working within areas of risk; Implement and maintain a speed limit on all internal/haul roads.
	Increase in ambient noise levels. General rise in ambient noise levels during open cast mining activities	<ul style="list-style-type: none"> Develop and implement a vehicle and equipment maintenance plan; Develop and implement a noise monitoring program; Implement appropriate Personal Protective Equipment (PPE) in working areas with elevated noise levels; Develop and implement noise grievance procedure;
	Air Blast	<ul style="list-style-type: none"> Review of blast design with increased stemming lengths should be considered. The use of aggregate stemming must be applied.
	Fly rock	
	Employee health and safety	<ul style="list-style-type: none"> Implement relevant aspects of the Occupational Health and Safety Act, 1993 (Act 85 of 1993); Provide employees, contractors, and visitors with suitable personal protective equipment; Maintain health and safety induction procedures for all employees, contractors, and visitors; Maintain an incidents register on site; Hold regular health and safety talks.

22 Other information required by the competent authority

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

- Impact on the socio-economic conditions of any directly affected person;
- Impact on any national estate referred to in Section 3(2) of the National Heritage Resources Act.

These aspects are discussed in the following sections.

22.1 Impact on the socio-economic conditions of any directly affected person

Impacts relating to the socio-economic will be undertaken during the impact assessment phase and included in the EIA/EMPr.

22.2 Impact on any national estate referred to in Section 3(2) of the National Heritage Resources Act

A cultural heritage assessment will be undertaken during the impact assessment phase to confirm the presence of any heritage sites of significance. The results of this study will be incorporated into the EIA/EMPr. Should such features be found within the study area of the UG1 open cast project, the impacts on these features will be assessed and the relevant and appropriate mitigation measures will be recommended.

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

No other matters required in terms of Section 21(4) (a) and (b) have been identified.

24 Conclusion

The aim of the Scoping Report is to identify the possible environmental, social and economic risks and impacts as well as impacts which might be associated with the establishment of the proposed UG1 opencast project.

This Draft Scoping Report also forms part of the start of the Public Participation Process where the public gets the opportunity to register as Interested and Affected Parties as to receive further information about the project and form part of the decision-making process for the project.

This stage similarly also forms part of the process where plan of studies for specialist studies to be undertaken are determined as part of the Environmental Impact Study. Potential impacts have been identified and these will be assessed in the Impact Assessment Phase. The main focus of the Scoping Phase is centred around alignment of the environmental assessment with important issues as to ensure that the significant issues are addressed, and reasonable alternatives examined.

This draft report has been made available for a 30 day legislated comment period. Once the 30 day comment period has lapsed, the Final scoping report will be submitted to the DMRE for decision making.

25 Undertaking regarding correctness of information

I, Suzanne van Rooy, herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.

Signature of the EAP

Date

26 Undertaking regarding level of agreement

I, Suzanne van Rooy, herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP

Date

27 References

Rustenburg Local Municipality (RLM), 2022. Integrated Development Plan 2022/2027. Rustenburg Local Municipality.

Shangoni Management Services (Shangoni), 2021: Glencore Operations South Africa (Pty) Ltd: Waterval Mine Consolidated EIAR and EMPR. Report Number: No number. August 2020

Appendices

Appendix A: Curriculum Vitae of EAP

Appendix B: Stakeholder Engagement Documentation

Appendix B1: List of stakeholders

Appendix B2: Minutes of pre-application meetings

Appendix B3: Proof of site notices

Appendix B4: Background Information Document

Appendix B5: Proof of distribution of BIDs

Appendix B6: Advertisement

Appendix B7: Notification of availability of the Draft Scoping Report

Appendix B8: Proof of email of Draft Scoping Report notification letter

Appendix C: Screening Tool Report