mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

Basic Assessment Report
And
Environmental Management Programme

for Listed Activities Associated with Mining Activities

Environmental Authorisation in Support of the Venetia Mine Integrated Regulatory Process - Basic Assessment, Regulation 29 and 31 Amendment for Venetia Mines

SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) (NEMA) AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 (ACT NO. 59 OF 2008) (NEM:WA) IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002) (MPRDA) (AS AMENDED).

Name of Applicant:	Venetia Mine
Tel no:	015 575 2773
Fax no:	
Physical Address:	1 National Rd, Musina, Limpopo
File Reference Number SAMRAD:	LPNEMA30/5/1/2/2/0058MR

Digby Wells and Associates (South Africa) (Pty) Ltd
Company Registration: 2010/008577/07

Turnberry Office Park,
Digby Wells House.
48 Grosvenor Road,
Bryanston,2191

Phone: +27 (0) 11 789 9495
Fax: +27 (0) 11 789 9495
E-mail: info@digbywells.com
Website: www.digbywells.com

Directors:
DJ Otto, J Mkhabela,
L Ratsoenyane

This document has been prepared by Digby Wells Environmental.

Report Type:	Draft Basic Assessment Report
Project Name:	Venetia Mine Integrated Regulatory Process - Basic Assessment, Regulation 29 and 31 Amendment for Venetia Mines
Project Code:	DBG6952

Name	Responsibility	Signature	Date
Brett Coutts	Project Manager		November 2022
Mia Smith	Project Sponsor		November 2022

This report is provided solely for the purposes set out in it and may not, in whole or in part, be used for any other purpose without Digby Wells Environmental prior written consent.

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002, as amended) (MPRDA), 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 (EA) can be granted following the evaluation of an Environmental Impact Assessment (EIA) and an Environmental Management Programme (EMPr) report in terms of the National Environmental Management Act, 1998 (Act No. 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 (GN R982 of 04 December 2014, as amended) (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 considered 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 a 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 EA being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner (EAP) 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 BASIC ASSESSMENT PROCESS

The objective of the BA process is to, through a consultative process–

- Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- Identify the alternatives considered, including the activity, location, and technology alternatives;
- Describe the need and desirability of the proposed alternatives,
- Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage , and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
- The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
- The degree to which these impacts—
  - can be reversed;
  - may cause irreplaceable loss of resources; and
  - can be managed, avoided or mitigated;
- Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
  - identify and motivate a preferred site, activity and technology alternative;
  - identify suitable measures to manage, avoid or mitigate identified impacts; and
  - identify residual risks that need to be managed and monitored.

EXECUTIVE SUMMARY

Introduction

De Beers Group (De Beers) appointed Digby Wells Environmental (Digby Wells) to undertake an Integrated Regulatory Process (IRP) to obtain the requisite environmental and water related authorisations for the Venetia Mine (Venetia) to transition from an open pit to an underground diamond mining operation.

Venetia is located approximately 80 km west of Musina and 40 km northeast of Alldays in the Limpopo Province. Mining commenced in 1992 using an open pit mining process, but as the depth of the pit increased mining using this method has become economically unviable. The decision has thus been taken to continue mining using underground methods.

As part of the IRP, a Gap Analysis was undertaken. This included a site visit followed by a desktop review of all existing authorisations in line with proposed changes to activities, products and services at the mine, including closure risks and requirements, to identify listed activities that may be triggered by the project and all other regulatory procedural requirements. The Gap Analysis concluded with recommendations on a way forward for the mine to achieve compliance with all relevant legislation.

As part of the IRP, a Gap Analysis was undertaken. This included a site visit followed by a desktop review of all existing authorisations in line with proposed changes to activities, products and services at the mine, including closure risks and requirements, to identify listed activities that may be triggered by the project and all other regulatory procedural requirements. The Gap Analysis concluded with recommendations on a way forward for the mine to achieve compliance with all relevant legislation. An IRP consisting of a Basic Assessment (BA) and Regulation 29 and 31 Amendment Process in terms of the Environmental Impact Assessment Regulations, 2014 (GN R982 of 04 December 2014, as amended) (EIA Regulations, 2014) promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) needs to be followed and concluded prior to proposed activities commencing.

This report constitutes the Draft BA, Regulation 29 and 31 Amendment Report and, which is submitted to Interested and Affected Persons (I&APs) and relevant authorities for review and comment in support of the application for amendment of the Environmental Authorisation (EA) for Listed Activities in terms of Listing Notice 1 (GN R983 of 04 December 2014, as amended) (Listing Notice 1) and Listing Notice 3 (GN R985 of 04 December 2014, as amended) (Listing Notice 3) of the EIA Regulations, 2014.

Project Applicant

The details of the Project Applicant are included in Table A below.

Table A: Project Applicant

Project Applicant:	De Beers Consolidated Mines Limited		
Registration number (if any):	2000/011085/07		
Trading name (if any):	Venetia Mine		
Responsible Person:	Gavin Anderson		
Contact person:	Nirvana Ramlal		
Physical address:	Venetia Mine, Musina		
Postal address:	PO Box 668, Musina		
Postal code:	0900	Cell:	0832788138
Telephone:	015-575 2710	Fax:	-
Email:	gavin.anderson@debeersgroup.com nirvana.ramlal@debeersgroup.com		

Project Overview

Venetia is the lawful holder of the following authorisations:

- EA and consolidated Environmental Management Programme (EMPr) (2012) for open pit and underground mining and associated listed activities, approved in terms of the NEMA (Ref. No. 12/1/9/2-V9);
- Amended EA (2015) for open pit and underground mining and associated listed activities in terms of the EIA Regulations, 2014 promulgated under NEMA (Ref. No. 12/1/9/2-V9);
- Environmental Management Plan (EMP) for a Copper Prospecting Right in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) (Ref. No. LP30/5/1/1/2/2394 PR);
- Atmospheric Emissions Licence (AEL) (2017) in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM:AQA) (Ref. No.12/4/12L-V7);
- Waste Tyre Stockpile Approval (2017) in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) (Ref. No.12/9/1); and
- Amended Waste Management Licence (WML) (2018) in terms of the NEM:WA (Ref. No. 12/4/10/8-A/9/V1/A1);

- Integrated Water Use Licence (IWUL) (2022) in terms of the National Water Act, 1998 (Act No. 36 of 1998) (NWA) (Ref. No.14/A63E/ABCGIJ/5111); and
- Amendment of Environmental Authorisation (2022) in terms of the National Environmental Management Act, 1998 (NEMA) as amended, and the Environmental Impact Assessment (EIA) Regulations, 2014 for Construction of Additional Stormwater Infrastructure and Water Containment Facilities on the Farm Venetia 103MS situated within Musina Local Municipality in the Limpopo Region (Ref LP30/5/1/2/3/2/1 (58) EM).

The following is required to be approved as part of this application:

Amendment of the EMPr:

Amendment of the EMPr in terms of Section 29 and 31 of the EIA Regulations 2014 (as amended) (Government Notice No. R. 982 of 4 December 2014 as amended by Government Notice No. R.1816 of 11 June 2022):

The approved EMPr does not explicitly mention the include the existing underground decline shaft; however, has included two shafts. The change in the access mining method will not in itself trigger a listed activity. However, it could be included as a non-substantive amendment (Regulation 29 Amendment), as the change has no new additional impacts based on the initial approval and no other person's rights will be affected by the change. The decline shaft will be included as a non-substantive amendment. The decline shaft will be included as a non-substantive amendment in terms of Regulation 29 Amendment Process in terms of the EIA Regulations 2014 promulgated under the NEMA.

The EMP Boundary will be amended to reflect the same footprint as the mine's operational boundary (current and future operational areas) as well as exclude majority of the neighbouring mine's (Diamcor Incorporated) Mining Right area which falls within Venetia's security fence. This is also be considered as a Regulation 29 Amendment.

Lastly there will be expansion to the WRD and Red Tailings area. The expansion of the WRD and Red Tailings area can be considered a change in the nature of the impact, thus requiring a Regulation 31 Amendment (substantive amendment), however will be managed according to the current approved authorisation, which addresses all associated impacts and provides the required mitigations.

New activities to be applied for:

- Additional pipelines to transport dangerous goods, such as hydrocarbons (diesel);
- Construction of the clean water attenuation pond and several small underground water storage dams;
- AEL variation application that is underway;
- Storage of hydrocarbons at underground and surface;
- Decommissioning of facilities and infrastructure;

- Expansion of the Waste Rock Dumps (WRD) and Red Area Tailings Footprint;
- Clearance of vegetation.

The intent is to incorporate all activities at the Venetia operations into an amended EMPr so as to ensure that all activities are lawfully executed and managed.

Further details pertaining to the new proposed activities and those to be incorporated, through this application, is provided in Table B below.

Table B: Summary of Activities under Application

BA Process Activities	Regulation 29 Amendment Activities	Regulation 31 Amendment Activities
• Additional pipelines which transports dangerous goods; • Hydrocarbon storage requirements at underground and surface workshops. • Construction of the clean water attenuation pond and several small underground water storage dams; • AEL variation application that is underway; • Clearance of vegetation; and • Decommissioning of any infrastructure not required for the duration of the authorisation. The authorities will be notified of specific infrastructure that will be decommissioned as this information becomes available.	• Amendment of the EMPr to include the decline area; and • The EMP Boundary will be amended to reflect the same footprint as the mine's operational boundary (current and future operational areas) as well as exclude majority of the neighbouring mine's (Diamcor Incorporated) Mining Right area which falls within Venetia's security fence (Refer to Appendix 4 for the current EMP Boundary and the Proposed amended Boundary)..	• Expansion of the WRD and Red Area Tailings footprint.

Purpose of this Report

This report is the Draft BA Report which incorporates a Regulation 29 and 31 Amendment Application for the operations. Comments received on this report will be collated in a Comments and Responses Report (CRR) which will form part of the final submission to the Department of Mineral Resources and Energy (DMRE).

Environmental Consultants

Digby Wells has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the IRP. The details of the EAP are provided in Table 11-1 below.

Table 11-1: Environmental Assessment Practitioner Details

EAP:	Mia Smith		
Professional affiliation/registration:	Registered EAP (EAPASA Reg. No. 2019/1 282)		
Contact person: (if different from EAP)	Brett Coutts		
Company:	Digby Wells and Associates (South Africa) (Pty) Ltd		
Physical address:	Digby Wells House, Turnberry Office Park, 48 Grosvenor Road, Bryanston, Gauteng 2191		
Postal address:	Private Bag X10046, Randburg		
Postal code:	2125	Cell:	072 909 3650
Telephone:	011 789 9495	Fax:	0 11 789 9498
Email:	brett.coutts@digbywells.com		

Approach and Methodology for the Public Participation Process

The Public Participation Process (PPP) will be undertaken in compliance with Chapter 6 of the EIA Regulations, 2014.This Draft Report has been submitted to the public for their input and comments for a period of 30 days. The commenting period is from 14 November 2022 and ends on 09 January 2023. The report is available for review on the Digby Wells website under Public Documents, which is a data free site (www.digbywells.com). Electronic copies (CDs) are available from the Digby Wells Public Participation Office, as well as at the Musina Local Municipality Offices.

The report will be updated with all the comments received from the I&APs prior to submission to the DMRE for consideration. Once the DMRE has made a decision regarding this application, this will be communicated to all the registered I&APs.

Project Alternatives

Project alternatives discussed within this report focus on process alternatives and the “No-Go” alternative. No further location alternatives have been considered, as the activities applied for complement existing activities on site and therefore, the location of new activities is dependent on the location of existing activities.

Conclusions and Recommendations

It is recommended that the EA and Regulation 29 and 31 Amendment applications be approved for the duration of the Life of Mine (LoM).Impacts identified within this report have been previously identified and mitigation measures within the approved EMPr must be implemented.

The existing EMPr encompasses all required mitigation measures required, however the proposed mitigation measures that have been provided within this report need to be read in conjunction with the existing mitigations measures that are currently in place.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AEL	Atmospheric Emissions License
BA	Basic Assessment
BID	Background Information Document
CRR	Comments and Response Report
De Beers	De Beers Consolidated Mines
Digby Wells	Digby Wells Environmental

DEM	Digital Elevation Model
DFFE	Department of Forestry, Fisheries and Environment
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIA Regulations, 2014	Environmental Impact Assessment Regulations, 2014 (GN R982 of 04 December 2014, as amended) (EIA Regulations, 2014) promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998)
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
FRD	Fine Residue Deposit
GDP	Gross Domestic Product
GVA	Gross Value Added
I&AP	Interested and Affected Persons
AIP	Alien Invasive Plants
IDP	Integrated Development Plan
IFC	International Finance Corporation
IRP	Integrated Regulatory Process
IWUL	Integrated Water Use Licence
LoM	Life of Mine
Listing Notice 1	GN R983 of 04 December 2014, as amended
Listing Notice 3	GN R985 of 04 December 2014, as amended
MAE	Mean Annual Evaporation
masl	Metres above mean sea level
MAP	Mean Annual Precipitation
MRA	Mining Right Area
MRPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MSA	Middle Stone Age

MSDS	Material Safety Data Sheets
NAAQS	National Ambient Air Quality Standards (GN R 1210 of 2009)
NCRs	National Noise-Control Regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992)
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NGO	Non-Governmental Organisations
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PPP	Public Participation Process
PR	Prospecting Right
PV	Photovoltaic
SAHRA	South African Heritage Resources Agency
Venetia	De Beers Venetia Mine
VOP	Venetia Open Pit
VUP	Venetia Underground Project
WML	Waste Management Licence
WRD	Waste Rock Dumps
WUL	Water Use License

Part A: Scope of Assessment and Basic Assessment Report

1 Introduction

De Beers Group (De Beers) appointed Digby Wells Environmental (Digby Wells) to undertake an Integrated Regulatory Process (IRP) to obtain the requisite environmental and water related authorisations for the Venetia Mine (Venetia) to transition from an open pit to an underground diamond mining operation.

Venetia is located approximately 80 km west of Musina and 40 km northeast of Alldays in the Limpopo Province, Mining commenced in 1992 using an open pit mining process, but as the depth of the pit increased mining using this method has become economically unviable. The decision has thus been taken to continue mining using underground methods.

As part of the IRP, a Gap Analysis was undertaken. This included a site visit followed by a desktop review of all existing authorisations in line with proposed changes to activities, products and services at the mine, including closure risks and requirements, to identify listed activities that may be triggered by the project and all other regulatory procedural requirements. The Gap Analysis concluded with recommendations on a way forward for the mine to achieve compliance with all relevant legislation. An IRP consisting of a Basic Assessment (BA) and Regulation 29 and 31 Amendment Process in terms of the Environmental Impact Assessment Regulations, 2014 (GN R982 of 04 December 2014, as amended) (EIA Regulations, 2014) promulgated under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) needs to be followed and concluded prior to proposed activities commencing.

This report constitutes the Draft BA, Regulation 29 and 31 Amendment Report which is submitted to Interested and Affected Persons (I&APs) and relevant authorities for review and comment in support of the application for amendment of the Environmental Authorisation (EA) for Listed Activities in terms of Listing Notice 1 (GN R983 of 04 December 2014, as amended) (Listing Notice 1) and Listing Notice 3 (GN R985 of 04 December 2014, as amended) (Listing Notice 3) of the EIA Regulations, 2014.

2 Project Applicant

2.1 Details of the Project Applicant

The details of the Project Applicant are included in Table 2-1 below.

Table 2-1: Project Applicant

Project Applicant:	De Beers Consolidated Mines Limited
Registration number (if any):	2000/011085/07
Trading name (if any):	Venetia Mine
Responsible Person:	Gavin Anderson
Contact person:	Nirvana Ramlal
Physical address:	Venetia Mine, Musina

Postal address:	PO Box 668, Musina		
Postal code:	0900	Cell:	083 278 8138
Telephone:	015-575 2710	Fax:	-
Email:	gavin.anderson@debeersgroup.com nirvana.ramlal@debeersgroup.com		

2.2 Details of EAP

Digby Wells has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the IRP. The details of the EAP are provided in Table 2-2 below.

Table 2-2: Environmental Assessment Practitioner Details

EAP:	Mia Smith		
Professional affiliation/registration:	Registered EAP (EAPASA Reg. No. 2019/1 282)		
Contact person: (if different from EAP)	Brett Coutts		
Company:	Digby Wells and Associates (South Africa) (Pty) Ltd		
Physical address:	Digby Wells House, Turnberry Office Park, 48 Grosvenor Road, Bryanston, Gauteng 2191		
Postal address:	Private Bag X10046, Randburg		
Postal code:	2125	Cell:	072 909 3650
Telephone:	011 789 9495	Fax:	0 11 789 9498
Email:	brett.coutts@digbywells.com		

2.3 Expertise of the EAP

2.3.1 The Qualifications of the EAP

Mia Smith holds an MSc Geography from the University of Johannesburg. Please refer to Appendix A for the EAP's curriculum vitae and qualification certificates.

2.3.2 Summary of the EAP's Past Experience

Mia Smith is the Divisional Manager of Environmental and Legal Services at Digby Wells. She has 15 years of experience in environmental consulting with expertise in Project Management, Environmental Auditing, Legal Compliance, Risk Management, Environmental Management Systems, Resettlement Action Planning and Social Closure.

3 Location of the Overall Activity

The project activities subject to this application are being undertaken at the Venetia Mine. The project areas are located in the Musina Local Municipality, within the Vhembe District Municipality in the Limpopo Province.

The Mining Right Area (MRA) span over several farm properties which are listed in Table 3-1.

Table 3-1: Property Details

<table>
<tr><td>Farm Name:</td><td>The MRA spans across the various properties listed below:
Portion 1 of the farm Venetia 103MS;
Portion 2 of the farm Venetia 103MS;
Portion 3 of the farm Venetia 103MS;
Portion 4 of the farm Venetia 103MS;
Portion 5 of the farm Venetia 103MS;
Remaining extent of the farm Venetia 103MS;
Portion 1 of the farm Krone 104MS;
Remaining extent of the farm Krone 104MS;
Remaining extent of the farm Rugen 105MS;
The farm Drumsheugh 99MS;
The farm Schroda 46MS; and
The farm Greefswald 37MS.</td></tr>
<tr><td>Application Area (Ha):</td><td>Clearance of vegetation – 14.52 ha.</td></tr>
<tr><td>Magisterial District:</td><td>Venetia is situated within the Musina Local Municipality, within the Vhembe District Municipality in the Limpopo Province.</td></tr>
<tr><td>Distance and direction from nearest town:</td><td>The mine is located 80km west of Musina and 40 south-east of Alldays.</td></tr>
<tr><td>21 digit Surveyor General Code for each farm portion:</td><td>The 21 digit Surveyor General Codes (SG Codes) for the properties associated with the Venetia MRA are as follows:
<table>
<tr><th>Farm</th><th>Potion</th><th>ID</th></tr>
<tr><td rowspan="6">VENETIA 103 MS</td><td>1/103</td><td>T0MS00000000010300001</td></tr>
<tr><td>2/103</td><td>T0MS00000000010300002</td></tr>
<tr><td>3/103</td><td>T0MS00000000010300003</td></tr>
<tr><td>4/103</td><td>T0MS00000000010300004</td></tr>
<tr><td>5/103</td><td>T0MS00000000010300005</td></tr>
<tr><td>RE/103</td><td>T0MS00000000010300000</td></tr>
</table></td></tr>
</table>

	KRONE 104 MS	1/104	T0MS00000000010400001	
		RE/104	T0MS00000000010400000	
	RUGEN 105 MS	RE/105	T0MS00000000010500000	
	DRUMSHEUGH 99 MS	99	T0MS00000000009900000	
	SCHRODA 46 MS		T0MS00000000004600000	
	GREEFSWALD 37 MS		T0MS00000000003700000	

Locality Map:	A locality map of the project is included in Figure 4-1.
Description of the overall activity:	De Beers appointed Digby Wells to undertake an IRP to obtain the requisite environmental- and water-related authorisations to transition from an open pit to an underground diamond mining operation. This application for EA comprises various activities which as briefly indicated in Section 1 above constitute the application of new triggered listed activities, as well as amendments to existing approvals based on the mine's future requirements. The various components of this application have been detailed separately below. <u>1. New Application Requirements</u> <u>1.1. Construction of a clean water attenuation pond and underground dams</u> A clean water attenuation pond will be constructed south of Pollution Control Dam (PCD) 1 (Coordinates: 22° 26' 49.00"S 29° 19 14'.17"E) to attenuate clean runoff reporting to this natural low-lying area and will have a storage capacity of 74 000 m^3. Several small underground water storage dams will also be constructed ranging from 90m^3 – 450m^3 <u>1.2 The expansion of facilities or infrastructure for the bulk transportation and storage of dangerous goods to address the mine's future needs</u> As this activity has been applied for and authorised in the EA (Ref. No. 12/1/9/2-V9), the new pipelines will constitute an amendment of the details of the EA only. <u>1.3 Regulation 29 Amendment</u> The approved EMPr does not explicitly mention the include the existing underground decline shaft; however, has included two shafts. The change in the access mining method will not in itself trigger a listed activity. However, it could be included as a non-substantive amendment, as the change has no new additional impacts based on the initial approval and no other person's rights will be affected by the change. The decline shaft will be included as a non-substantive amendment. This amendment to the details of the EMPr will require a Regulation 29 Amendment Application in terms of the EIA Regulations, 2014. The EMP Boundary will be amended to reflect the same footprint as the mine's operational boundary (current and future operational areas) as well as exclude majority of the neighbouring mine's (Diamcor Incorporated) Mining Right area which falls within Venetia's security fence (Refer to Appendix 4 for the current EMP Boundary and the Proposed amended Boundary).

	1.4 Regulation 31 Amendment of the EMPr Expansion of the WRD and Red Area Tailings footprint. 1.5 Administrative Amendments Administrative changes to the WML is required. 2. New Activities 2.1. Clearance of vegetation Approximately 14.52 ha of vegetation will be cleared associated with the footprint expansion of the WRD and Red Area Tailings Footprint, and clean water attenuation pond. 2.2 Decommissioning of facilities and infrastructure Decommissioning of any infrastructure not required for the duration of the authorisation. The authorities will be notified of specific infrastructure that will be decommissioned as this information becomes available. 2.3. Atmospheric Emissions Licence AEL renewal and variation application that is underway;

4 Locality Map

The local setting of the project area is depicted in Figure 4-1 below.

Figure 4-1: Locality Map

5 Description of the Scope of the Proposed Overall Activity

Details of the IRP are expanded on in the sections below.

5.1 Listed and Specified Activities

Activities identified in Listing Notice 1 or Listing Notice 3 requires that a BA Process be followed when applying for an EA. It is noted that Venetia has previously approved Listed Activities for the operation, as detailed in Table 5-1 and Table 5-2 below.

Table 5-1: Previously Authorised Listed Activities for the Venetia Mine (Ref. No. 12/1/9/2 – V9)

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2010
The development of facilities or infrastructure for the generation of electricity where the electricity output is more than 10 MW but less than 20 MW.	Activity No. 1 of GN R544 of 18 June 2010– Listing Notice 1
Construction of sewage transfer station and pipelines to the existing Sewage Treatment Works are included in the activities authorised.	Activity No. 9 of GN R544 of 18 June 2010– Listing Notice 1
Extension and upgrading of the existing river diversion is included within the authorisation granted.	Activity No. 11 of GN R 544 of 18 June 2010– Listing Notice 1
Construction and development of PCDs with a combined storage capacity of 585 000 m^3 and the construction of new reservoirs.	Activity No. 12 of GN R544 of 18 June 2010– Listing Notice 1
Widening of haul roads for access and ore /waste transport has been authorised.	Activity No. 22 of GN R544 of 18 June 2010– Listing Notice 1
Decommissioning of existing salvage yard and disused prefabricated housing has been authorised.	Activity No. 27 of GN R544 of 18 June 2010– Listing Notice 1
Construction of sewage transfer station and pipelines to the existing Sewage Treatment Works are included in the activities authorised.	Activity No. 37 of GN R544 of 18 June 2010– Listing Notice 1
Construction and development of PCDs with a combined storage capacity of 585 000 m^3 and the construction of new reservoirs.	Activity No. 41 of GN R544 of 18 June 2010– Listing Notice 1
The widening of a road by more than 6 m, or the lengthening of a road by more than 1 km - (ii) where no reserve exists, where the existing road is wider than 8 m.	Activity No. 47 of GN R544 of 18 June 2010– Listing Notice 1
Upgrading of refuelling bays by increasing storage capacity to 27 m^3 has been authorised.	Activity No. 49 of GN R544 of 18 June 2010– Listing Notice 1

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2010
Underground fuel storage and workshops has been authorised.	Activity No. 3 of GN R545 of 18 June 2010– Listing Notice 2
Construction of the waste management facility (Salvage Yard) has been authorised.	Activity No. 5 of GN R545 of 18 June 2010– Listing Notice 2
The construction of facilities or infrastructure for the bulk transportation of dangerous goods -(ii) in liquid form, outside an industrial complex, using pipelines, exceeding 1000 metre in length, with a throughput capacity of more than 50 m^3 per day.	Activity No. 6 of GN R545 of 18 June 2010– Listing Notice 2
Physical alteration of undeveloped, vacant or derelict land for residential, retail, commercial, recreational, industrial or institutional use, where the total area to be transformed is 20 ha or more, except where such physical alteration takes place for (i) linear development activity; or (ii) agriculture or afforestation where activity 16 in this Schedule will apply.	Activity No. 15 of GN R545 of 18 June 2010– Listing Notice 2
The construction of a dam, where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 m or higher or where the high-water mark of the dam covers an area of 10 ha or more.	Activity No. 19 of GN R545 of 18 June 2010– Listing Notice 2
The construction of a reservoirs for bulk water supply with a capacity of more than 250 m^3.	Activity No. 2 of GN R546 of 18 June 2010– Listing Notice 3
The construction of facilities of infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 m^3.	Activity No. 10 of GN R546 of 18 June 2010– Listing Notice 3
Construction of new buildings (administrative and commercial); and Upgrading of existing building infrastructure such as Security building, Supply Chain Services, Skills Development Centre, Wellness Centre, and Explosive's magazine area.	Activity No. 16 of GN R546 of 18 June 2010– Listing Notice 3
Construction of new buildings (administrative and commercial); and Upgrading of existing building infrastructure such as Security building, Supply Chain Services, Skills Development Centre, Wellness Centre, and Explosive's magazine area.	Activity No. 23 of GN R546 of 18 June 2010– Listing Notice 3
Construction of new buildings (administrative and commercial); and	Activity No. 24 of GN R546 of 18 June 2010– Listing Notice 3

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2010
Upgrading of existing building infrastructure such as Security building, Supply Chain Services, Skills Development Centre, Wellness Centre, and Explosive's magazine area.	
Phased activities for all activities listed in this Schedule and as it applies to a specific geographical area. which commenced on or after the effective date of this Schedule, where any phase of the activity may be below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold.	Activity No. 26 of GN R546 of 18 June 2010– Listing Notice 3

Table 5-2: Previously Authorised Listed Activities for Venetia Mine (Ref. No. LP30/5/1/2/3/2/1/58/EM)

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2014 (as amended)
The development of infrastructure exceeding 1 000 m in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0.36 m or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for bulk transportation of water or storm water or stormwater drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	Activity No. 9 of GN R983 of 7 April 2014, as amended - Listing Notice 1
The development and related operation of infrastructure exceeding 1 000 m in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0.36 m or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	Activity No. 10 of GN R983 of 7 April 2014, as amended - Listing Notice 1
The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 m^2; or (ii) infrastructure or structures with a physical footprint of 100 m^2 or more; where such development occurs— (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback	Activity No. 12 of GNR 983 of 7 April 2014, as amended - Listing Notice 1

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2014 (as amended)
exists, within 32 m of a watercourse, measured from the edge of a watercourse; — excluding— (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.	
The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 m^3 or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.	Activity No. 13 of GN R983 of 7 April 2014, as amended - Listing Notice 1
The infilling or depositing of any material of more than 10 m^3into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 m^3 from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	Activity No. 19 of GN R983 of 7 April 2014, as amended - Listing Notice 1
The development of a road— (i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) with a reserve wider than 13.5 m, or where no reserve exists where the road is wider than 8 m; but excluding a road— (a) which is identified and included in activity 27 in Listing Notice 2 of	Activity No. 24 of GN R983 of 7 April 2014, as amended - Listing Notice 1

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2014 (as amended)
2014; (b) where the entire road falls within an urban area; or (c) which is 1 kilometre or shorter.	
The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution, excluding— (i) where the facility, infrastructure, process or activity is included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; (ii) the expansion of existing facilities or infrastructure for the treatment of effluent, wastewater, polluted water or sewage where the capacity will be increased by less than 15 000 m^3 per day; or (iii) the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 m^3 or less per day.	Activity No. 34 of GN R983 of 7 April 2014, as amended - Listing Notice 1
The expansion of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, where the combined capacity will be increased by 50 000 m^3 or more.	Activity No. 50 of GN R983 of 7 April 2014, as amended - Listing Notice 1
The expansion of a dam where— (i) the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, was originally 5 m or higher and where the height of the wall is increased by 2.5 m or more; or (ii) where the high-water mark of the dam will be increased with 10 ha or more.	Activity No. 66 of GN R983 of 7 April 2014, as amended - Listing Notice 1
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, excluding–(i) activities which are identified and included in Listing Notice 1 of 2014; (ii) activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; (iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily	Activity No. 6 of GN R984 of 7 April 2014, as amended - Listing Notice 2

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2014 (as amended)
throughput capacity of 2 000 m^3 metres or less; or (iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 m^3 per day.	
The clearance of an area of 20 ha or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan; and Site clearing of the footprint areas of the stormwater facilities.	Activity No. 15 of GN R984 of 7 April 2014, as amended - Listing Notice 2
The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 m or higher or where the high-water mark of the dam covers an area of 10 ha or more.	Activity No. 16 of GN R984 of 7 April 2014, as amended - Listing Notice 2
The development of a road wider than 4 m with a reserve less than 13.5 m. e. Limpopo i. Outside urban areas: (gg) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas.	Activity No. 4 of GN R985 of 7 April 2014, as amended - Listing Notice 3
The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 m^2; or (ii) infrastructure or structures with a physical footprint of 10 m^2 or more; where such development occurs— (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback has been adopted, within32 m of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. e. Limpopo i. Outside urban areas: hh) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.	Activity No. 14 of GN R985 of 7 April 2014, as amended - Listing Notice 3
The widening of a road by more than 4 m, or the lengthening of a road by more than 1 km. e. Limpopo i. Outside urban areas: gg) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.	Activity No. 18 of GN R985 of 7 April 2014, as amended - Listing Notice 3

Name of Activity (Previously authorised by Approved EMPr)	Corresponding Listed Activities in terms of EIA Regulations, 2014 (as amended)
The expansion of— (i) dams or weirs where the dam or weir is expanded by 10 m^2 or more; or (ii) infrastructure or structures where the physical footprint is expanded by 10 m^2 or more; where such expansion occurs— (a) within a watercourse; (b) in front of a development setback adopted in the prescribed manner; or (c) if no development setback has been adopted, within 32 m of a watercourse, measured from the edge of a watercourse; excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. e. Limpopo i. Outside urban areas: (gg) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve;	Activity No. 23 of GN R985 of 7 April 2014, as amended - Listing Notice 3

The proposed new activities at Venetia, fall within the thresholds of Listing Notices 1 and 3; and therefore, requires a BA Process to be followed. Table 5-3 below details all new activities that will be undertaken as part of this proposed project and the listed actives which are triggered.

Table 5-3: Activities requiring authorisation

Name of Activity	Aerial extent of the activity	Listed Activity	Applicable Listing Notice	Waste Management Authorisation
Clearance of vegetation The clearance of an area of 1 ha or more, but less than 20 ha of indigenous vegetation. Clearance of vegetation relating to the expansion of the Waste Rock Dumps and Red Tailings Area, construction of the clean water attenuation pond.	14.52 ha	X – 27	GN R983, as amended – Listing Notice 1	**N/A**
Decommissioning of infrastructure Activity 31 would not be applicable for the decommissioning of infrastructure, unless an equivalent activity is triggered in terms of Listing Notice 1 of 2014, Listing Notice 2 of 2014 or Listing Notice 3 of 2014, as amended, however this activity has been included in the event that decommissioning activities trigger any activity as identified within the respective listing notices. Decommissioning of any infrastructure not required for the duration of the authorisation. The authorities will be notified of specific infrastructure that will be decommissioned as this information becomes available.	N/A	X -31	GN R983, as amended – Listing Notice 1	**N/A**

Name of Activity	Aerial extent of the activity	Listed Activity	Applicable Listing Notice	Waste Management Authorisation
Application for AEL and administrative amendment of the WML The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution. The current AEL renewal and variation application that is underway.	N/A	X - 34	GN R983, as amended – Listing Notice 1	**N/A**
Amendment of the EMP Area Any activity including the operations of that activity which requires an amendment or variation to a right or permit in terms of Section 102 of the MPRDA, as well as any other applicable activity contained in this Listing Notice or in Listing Notice 3 of 2014, required for such amendment.	-	X – 21D	GN R 983 – Listing Notice 1	**N/A**
Storage and Handling of Dangerous Goods The expansion and related operations of facilities for the storage, or storage and handling, of dangerous good, where the capacity of such storage facility will be expanded by more than 80 cubic meters. Note to mention that previous EA covers fuel storage and this activity is being included to ensure the storage of hydrocarbons for surface and underground has been addressed.	-	X - 51	GN R983, as amended – Listing Notice 1	**N/A**

Name of Activity	Aerial extent of the activity	Listed Activity	Applicable Listing Notice	Waste Management Authorisation
Construction of a Clean Water Attenuation Pond and Underground Water Storage Dams *The construction of facilities or infrastructure for the off- stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 m^3 or more.* An application for a WULA has been applied through Shangoni; however, the EA application for this pond has been excluded from the Shangoni application. The pond has therefore been included in this application to ensure compliance. Several small underground water storage dams will also be constructed ranging from 90m^3 – 450m^3	74 000 m^3 4.1 ha 90m^3 – 450m^3 (Underground water storage dams)	X - 13	GN R 983 – Listing Notice 1	**N/A**
Upgrading of the refuelling bays and associated pipelines *The expansion of facilities or infrastructure for the bulk transportation of dangerous goods:* *in liquid form, outside an industrial complex or zone, by an increased throughput capacity of 50 m^3s or more per day.* As this activity has been applied for and authorised in the existing EA, the new pipeline will form an amendment of the details of the EA only.	-	X -60	GN R983 – Listing Notice 1	**N/A**

Name of Activity	Aerial extent of the activity	Listed Activity	Applicable Listing Notice	Waste Management Authorisation
Storage of dangerous goods *The expansion of facilities of infrastructure for the storage, or storage and handling of a dangerous good, where such storage facilities will be expanded by 30 m^3 or more but less than 80 m^3.* This is specifically related to the upgrading of workshops on site.	*This has been addressed in Activity 51 of Listing Notice 1 covers this activity..*	X -22	GN R985 – Listing Notice 3	N/A

5.2 Description of the Activities to be Undertaken

5.2.1 Application Requirements

A visual summary of the proposed amendments is illustrated in Figure 5-1 and Appendix B.

5.2.1.1 Construction of a Clean Water Attenuation Pond and Underground Water Storage Dams

A clean water attenuation pond will be constructed south of PCD 1 (Coordinates: 22° 26' 49.00"S 29° 19 14'.17"E) to attenuate clean runoff reporting to this natural low-lying area and will have a storage capacity of 74 00 0m^3.

Several small underground water storage dams will also be constructed ranging from 90m^3 – 450m^3

5.2.1.2 Transportation of Dangerous Goods

As this activity has been applied for and authorised in the EA. The new pipelines will form an amendment of the details of the EA only. New pipelines are depicted in Figure 3-1.

5.2.1.3 Regulation 29 Amendment

The approved EMPr does not explicitly mention the include the existing underground decline shaft; however, has included two shafts. The change in the access mining method will not in itself trigger a listed activity. However, it could be included as a non-substantive amendment, as the change has no new additional impacts based on the initial approval and no other person's rights will be affected by the change. The decline shaft will be included as a non-substantive amendment. This amendment to the details of the EMPr will require a Regulation 29 Amendment Application in terms of the EIA Regulations, 2014.

The EMP Boundary will be amended to reflect the same footprint as the mine's operational boundary (current and future operational areas) as well as exclude majority of the neighbouring mine's (Diamcor Incorporated) Mining Right area which falls within Venetia's security fence.

5.2.1.4 Regulation 31 Amendment of the EMPr

Expansion of the WRD and Red Area Tailings footprint.

5.2.1.5 New Activities

5.2.1.5.1 Clearance of vegetation

Approximately 14.52 ha of vegetation will be cleared associated with the footprint expansion of the WRD and Red Area Tailings Footprint, and clean water attenuation pond.

5.2.1.5.2 Decommissioning of facilities and infrastructure

Decommissioning of any infrastructure not required for the duration of the authorisation. The authorities will be notified of specific infrastructure that will be decommissioned as this information becomes available.

5.2.1.5.3 Atmospheric Emissions Licence Variation Application

An Atmospheric Emissions Licence Variation Application is currently underway.

5.2.1.6 Administrative Amendments

Waste generated from the VUP will be temporarily stored underground before being transferred onto the existing licensed facility on site (Ref. No. WML 12/4/10/08 – A/9/V1/A1). It is important to note that the mine has an existing WML with some of the conditions that are not applicable, as identified by previous audit findings as discussed below and an administrative process is being followed to amend these conditions.

Based on the WML Compliance Audit undertaken by Tabacks, in 2020 various findings have highlighted that some conditions are not appropriate for Venetia Mine's activities and geographic location. Tabacks advised the following: "It is advised, as agreed upon with the DMRE, that Venetia should apply for an amendment of its WML"

Based on the WML Compliance Audit undertaken by Tabacks in 2020, the following administrative changes included in Table 12 are required. Based on the correspondence and engagement with the DMRE, this EA application forms part of the amendment to the WML conditions, however, a separate notification will also be sent to the DMRE requesting these administrative changes to be made to the existing WML.

A separate WML administrative notification amendment application form will be submitted to the DMRE noting these changes that are required to the WML.

Table 5-4: Amendment of the WML

Condition Number	Description of Condition	Comments Raised in Audit	Condition
Condition 12 – Monitoring Committee	12.1 - The Licence Holder must take all reasonable steps to maintain and ensure the continued functioning of a Monitoring Committee for the normal operative lifetime of the site and for a period of at least two (2) years after the closure of the site, or such longer period as may be determined by the Department. 12.2 - The Monitoring Committee must formulate the terms of reference and code of conduct, according to the Minimum Requirements, Second Edition. 12.3 - The Monitoring Committee must be representative of relevant interested and affected persons as recommended in the Minimum Requirements and may comprise: • Licence Holder and/or his appointed consultant(s) or advisors(s); • Representative(s) of the Health, Environment and/or	Venetia operates in a security sensitive area, and there are no public or town councils in close proximity to the mine that can be deemed as relevant stakeholders, it is therefore argued that these conditions should not apply to the mine due to its specific site activities and location. During a meeting held between Venetia and DMRE relating to the above issued, the DMRE representative had indicated that, in principal he did not have any objections to remove this requirements, however, he required confirmation from LEDET as to the reason for inclusion of the said condition before making a final decision on the matter. Based on the correspondence and engagement with the DMRE, this EA application forms part of the amendment to the WML conditions. A separate notification will also be sent to the DMRE requesting these	Conditions assessed and are not applicable and should be removed.

Condition Number	Description of Condition	Comments Raised in Audit	Condition
	Waste Departments of the relevant Local Authority; • At least two (2) representative(s) of this Department; and • At least three (3) persons/parties, or their representatives elected by the local community. Condition 12.4 - The Monitoring Committee must meet at least twice a year and not later than 30 days after the external audit report specified in condition 9.2.1 has been submitted according to condition 9.2.3. Condition 12.5 - The Licence Holder must keep minutes of all meetings of the Monitoring Committee and distribute these minutes to all members of the Monitoring Committee within 14 days after the meeting.	administrative changes to be made to the existing WML.	

5.2.2 New Activities

Clearance of vegetation associated with the expansion of the Waste Rock Dump WRD) and Red Tailings area and the clean water attenuation pond will result in 14.52 ha of vegetation being cleared.

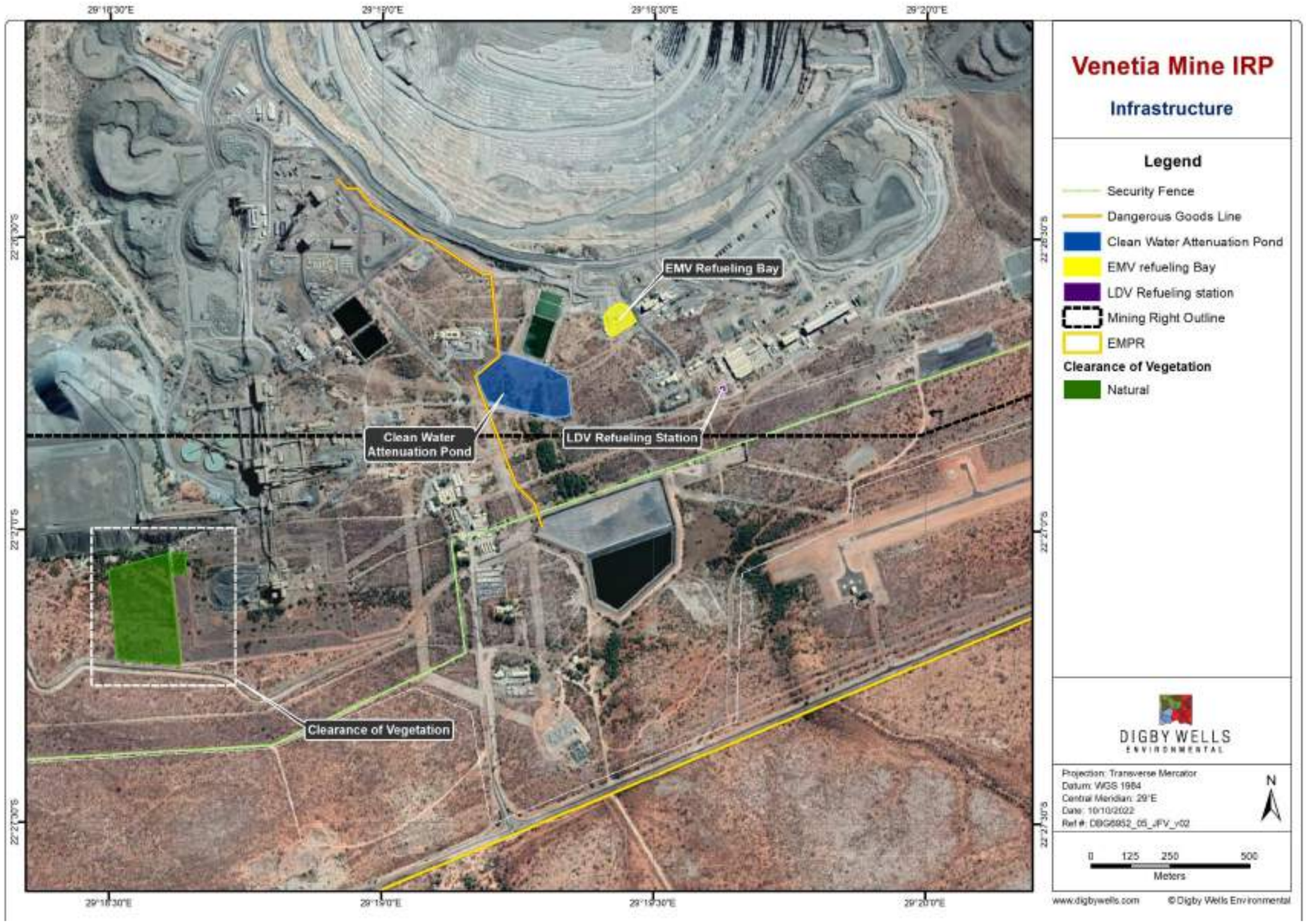

Figure 5-1: Infrastructure Map

6 Policy and Legislative Context

An application for EA in terms of NEMA has been submitted to the DMRE for Listed Activities detailed in Section 5 above. Various policy and legislative requirements are applicable to the EA application and assessment process, as detailed in Table 6-1.

Table 6-1: Policy and Legislative Context

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
The Constitution of the Republic of South Africa, 1996 (the Constitution) Under Section 24 of the Constitution, it is clearly stated that: *Everyone has the right to* • (a) an environment that is not harmful to their health or well-being; and • (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that - • (i) Prevent pollution and ecological degradation; • (ii) Promote conservation; and • (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.	Venetia Mine is undertaking an IRP to identify and determine the potential impacts associated with the proposed activities, as well as ensure all activities undertaken at Venetia are lawfully managed and authorised against one EMPr.	Mitigation measures recommended in this report aim to ensure that the potential impacts are managed to acceptable levels to support the rights as enshrined in the Constitution.
National Environmental Management Act, 1998 (Act No 107 of 1998) and EIA Regulations, 2014 NEMA, as amended, was set in place in accordance with Section 24 of the Constitution. Certain environmental principles under NEMA have to be adhered to, to inform decision making for issues affecting the environment. Section 24 (1)(a) and (b) of NEMA state that: *The potential impact on the environment and socio-economic conditions of activities that require authorisation or permission by law and which may significantly affect the environment, must be considered, investigated and assessed prior to their implementation and reported to the organ of state charged by law with authorizing, permitting, or otherwise allowing the implementation of an activity.*	The proposed new activities at Venetia are identified to trigger the Listed Activities in the Listing Notices (as amended) and therefore require an EA prior to being undertaken. All identified Listed Activities trigger Listing Notice 1 and 3, which constitutes a BA Process. Through this application Venetia is also proposing to amend the approved Venetia EMPr to incorporate the amendments. The proposed amendment and consolidation constitute a Regulation 29 and 31 Amendment Process.	This IRP has been duly informed by the requirements of the NEMA.
Mineral and Petroleum Resource Development Act. 2002 (Act No. 28 of 2002) The MPRDA sets out the requirements relating to the development of the nation's mineral and petroleum resources. It also aims to ensure the promotion of economic and social development through exploration and mining related activities. The MPRDA ensures that environmental management principles as set out in the NEMA are applied to all mining operations. The MPRDA serves as a guideline for interpretation, administration and implementation of environmental requirements and ensures that mineral resources are exploited in a sustainable manner to serve both present and future generations.	Activities associated with mining thus applicable.	Activities associated with mining thus applicable.
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) On 29 November 2013, the list of waste management activities published under GN R718 of 3 July 2009 (GN R718) was repealed and replaced with a new list of waste management activities under GN R921 of 29 November 2013. Included in the new list are activities listed under Category A, B and C for which a WML may be required.	Administrative amendments are required in addition to the expansion of the WRD.	Refer to Section 5.2.
National Water Act, 1998 (Act No. 36 of 1998) The NWA provides for the sustainable and equitable use and protection of water resources. It is founded on the principle that the National Government has overall responsibility for and authority over water resource management, including the equitable allocation and beneficial use of water in the public interest, and that a person can only be entitled to use water if the use is permissible under the NWA. GN R704 was published in June 1999 and aims to regulate the use of water for mining and related activities for the protection of water resources and states the following:	The construction of a clean water attenuation pond, as well as the stormwater infrastructure, will require a WUL in terms of the NWA.	This is currently being undertaken as a separate independent process.

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
• Regulation 4: No residue deposit, reservoir or dam may be located within the 1:100 year flood line, or less than a horizontal distance of 100 m from the nearest watercourse. Furthermore, person(s) may not dispose of any substance that may cause water pollution; • Regulation 5: No person(s) may use substances for the construction of a dam or impoundment if that substance will cause water pollution; • Regulation 6 is concerned with the capacity requirements of clean and dirty water systems, and • Regulation 7 details the requirements necessary for the protection of water resources.		
National Noise Control Regulations, R.154 of 1992 (the Noise Regulations) promulgated in terms of Section 25 of the Environmental Conservation Act, 1989 (Act No. 73 of 1989) The National Noise-Control Regulations (GN R154 in Government Gazette No. 13717 dated 10 January 1992) (NCRs) form part of the Environmental Conservation Act and these Regulations apply to external noise. The NCRs differentiates between Disturbing Noise levels (which is objective and scientifically measurable which are compared to existing ambient noise level) and Noise Nuisance (which is a subjective measure and is defined as noise that "*disturbs or impairs or may disturb or impair the convenience or peace of any person*"). Local Authorities use Controlled Areas to identify areas with high noise levels. Restrictions have been set out for development that occurs in these Controlled Areas. These regulations make provision for guidelines pertaining to noise control and measurements. The regulations refer to the use of the South African National Standards 10103:2008 (SANS) guidelines for the Measurement and Rating of Environmental Noise with Respect to Land Use, Health, and Annoyance and to Speech Communication. As such, a Noise Impact Assessment in accordance with the NCRs must be undertaken for submission to determine the potential disturbing and nuisance noise levels associated with a particular development.	All existing approvals are in place.	All existing approvals are in place.
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) 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. The Act requires that Heritage Resources Agencies, in this case, the South African Heritage Resources Agency (SAHRA) and Provincial Heritage Resources Authority, be notified as early as possible of any developments that may exceed certain minimum thresholds. This act is enforced through the National Heritage Regulations GN R 548 (2000).	Various studies have been conducted and a consolidated report has been included as an Appendix E to this document.	Various studies have been conducted and a consolidated report has been included as an Appendix to this document.
GN R 1147 (Financial Provisioning Regulations), 2015 The Financial Provisioning Regulations prescribe methods for determining the quantum of financial provision for rehabilitation and mechanisms for providing for it. Section 41 (1) of the MPRDA has been repealed and Section 24P of the NEMA, as amended, which provides that the holder of a mining right must make financial provision for rehabilitation of negative environmental impacts. The financial provision must guarantee the availability of sufficient funds.	A rehabilitation plan and closure costing which is aligned with the GN R1147 is available and attached as an Appendix to this document.	A rehabilitation plan and closure costing which is aligned with the GN R1147 is available and attached as an Appendix E to this document.
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) According to the NEM:AQA the Department of Forestry, Fisheries and Environment (DFFE), the provincial 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 new approach to the air quality regulation, as reflected in the NEM: AQA is the establishment of National Ambient Air Quality Standards (NAAQS) (GN R 1210 of 2009). 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.	An AEL renewal and amendment that is underway.	An AEL renewal and amendment that is underway.

7 Need and Desirability of the Proposed Activities

In 2017, the then Department of Environmental Affairs published an Integrated Environmental Management Guideline, the Guideline on Need and Desirability. The following provides information on how the guideline requirements were considered in this BA Process and should be read in conjunction with the guideline.

The proposed activities that are subject to this application are planned to ensure better and lawful environmental practices at the operation and form an extension of the requirements needed to adhere to the transition to underground mining. The new activities presented in this report have been proposed with the intention to ensure that the Venetia Operation can continue to be executed lawfully, reduce environmental risks, promote best environmental practice and provide opportunity for future growth.

The *status quo* of the Needs and Desirability as detailed in the application for EA remains.

8 Motivation for the Overall Preferred Site, Activities and Technology Alternative

All proposed activities are located within the approved MRA and EMPr boundaries within disturbed areas wherever possible. The new activities and amendments are directly related to existing infrastructure.

9 Full Description of the Process Followed to Reach the Proposed Preferred Alternatives within the Site

According to the Department of Environmental Affairs Criteria for Determining Alternatives in EIA Guideline (2004), there are various types or categories of alternatives, including:

- Activity alternative – consideration of different means to achieve the same project objective;
- Location alternative – alternative project sites in the same geographic area;
- Site layout alternative – consideration of the different options to place project infrastructure;
- Process/design alternative – alternative process/design/equipment;
- Routing alternative – consideration of different routes for linear infrastructure; and
- No-go alternative – the proposed project/activity does not proceed, implying that the current situation or status quo remains.

The above-mentioned categories of alternatives were considered and are detailed in the subsections below.

9.1 Details of the Development Footprint Alternatives Considered

9.1.1 Activity Alternatives

No activity alternatives were considered as the mine is an existing operation and the There are really no alternatives that can be considered from a mineral resource perspective, however the infrastructure layout has been optimised to reduce significance of impacts.

9.1.2 Location/Site Layout Alternatives

No location alternatives were considered as the mine is an existing operation and the activities included in this application allow for the continued operation of approved activities.

The locations which have been proposed have been informed by:

- Existing pipeline routes and facility locations;
- Optimisation of current processes; and,

9.1.3 Available disturbed areas (to minimize possible additional impacts). Process/Design Alternatives

Worley Parsons conducted a trade-off study between the use of diesel bower trucks versus using a diesel pipeline system (Appendix C). It was determined that the diesel pipeline will be most suitable resulting in capital savings and decreased risk of human error when handling dangerous goods.

9.1.4 No-go Alternative

The no-go alternative was considered for the new proposed activities as well as the amendment of activities associated with the Venetia Mine. These no-go alternatives are discussed separately below.

9.1.4.1 Proposed New Activities

The no-go alternative entails maintaining the *status quo*. There would be a higher level of human interaction associated with the storage and transportation of dangerous goods. This presents a higher risk to the environment due to possible human error.

9.1.4.2 Amendment Activities

Administrative amendments are required to align what has been authorised and the descriptions of the activities within the authorisation. The *status quo* would remain the same.

The proposed changes will allow for a successful transition from open pit to underground production and thereby allow continuation of mining activities. This will further ensure that those who are already employed, remain employed as production activities will continue. The result is that unemployment in the area will be avoided. Venetia mine will also continue to contribute to the GVA of the labour-sending areas and local municipalities.

9.2 Details of the Public Participation Process Followed

The PPP is undertaken in terms of the regulatory requirements set out in Regulation 44 and 45 of the EIA Regulations, 2014 (as amended) and as required in terms of Chapter 5 of NEMA. The PPP enables stakeholders to partake and submit comments, suggestions or issues of concern. For this Draft BA and Regulation 31 Amendment Report, the PPP has been divided into three phases as follows:

- Announcement Phase;
- Draft BA and Regulation 29 and 31 Amendment Report Phase; and
- Decision Making Phase.

9.2.1 Announcement Phase

The project was announced together with availability of the Draft BA and Regulation 29 and 31 Amendment Report for public comment. The announcement phase included the activities detailed below.

9.2.1.1 Identification of Stakeholders

Venetia Mine has an existing database of I&APs associated with their mining project and previous regulatory processes. The existing database for the Venetia operation was used and updated to ensure that all potentially relevant I&APs will be informed.

Stakeholders were grouped into various categories such as landowners/occupiers, communities, relevant government organisations, non-governmental organisations (NGOs) and business enterprises.

Stakeholders were encouraged to register as I&APs throughout the PPP and the stakeholder database was updated throughout the PPP with new stakeholders.

9.2.1.2 Public Participation Media

Considering the legislative requirements and good practice the following methods have been implemented to make project and information available to stakeholders:

- **Background Information Document (BID):** BIDs were emailed and distributed around the project area. The BID included a project description, information about the required legislation, the competent authorities and details of the appointed EAP. The BID was also accompanied by a registration and comment form for stakeholders to register as I&APs or to submit comments. Information regarding the availability of the Report was also provided;
- **Newspaper advertisement:** a newspaper advertisement was placed in Capricorn Voice and the Limpopo Mirror on 16th and 18th November respectively. The advertisement included a brief project description, information about the required

legislation, the competent authorities, details of the appointed EAP, registration process for I&APs, and information regarding the availability of the Draft BA and Regulation 29 and 31 Amendment Report for public comment; and

- **Site notices:** site notices were put up at various places which contained a brief project description, information about the required legislation, the competent authorities and details of the EAP, registration process for I&APs and information regarding the availability of the Draft Report for public comment.

9.2.2 IRP Phase

This Draft BA and Regulation 29 and 31 Amendment Report has been made available for a public comment period of 30 days from **14th November to the 9th January** at publicly on the Digby Wells website www.digbywells.com (under Public Documents).

Comments, issues of concern and suggestions received from stakeholders during this public comment period will be captured in a Comments and Response Report (CRR) which will be included into the Final BA, Regulation 29 and 31 Amendment Report for DMRE's appraisal.

9.2.3 Decision Making Phase

The Final BA and Regulation 29 and 31 Amendment Report (including the CRR) will be submitted to DMRE for appraisal. The DMRE, as the competent authority, will issue a decision on the EA for the proposed project. This decision will be communicated to stakeholders as prescribed under the NEMA legislation. As such, notification to stakeholders will be done by means of a letter sent via email/post and SMS.

9.2.4 Summary of Public Participation Activities Undertaken

Table 9-1 provides a summary of the PPP activities undertaken thus far, together with referencing materials.

Table 9-1: Public Participation Activities

Activity	Details	Reference in Report
Identification of stakeholders	Stakeholder database representing various sectors of society, including directly affected and adjacent landowners, in and around the project area was utilised.	N/A
Distribution of Notification Letter and BID	A Notification Letter and BID with registration and comment form was emailed stakeholders on 14th November 2022	Appendix D: BID
Placing of newspaper advertisement	A newspaper advertisement was placed in the Capricorn Voice and the Limpopo Mirror on 16th and 18th November respectively.	Appendix D: Newspaper Advert

Activity	Details	Reference in Report
Erecting site notices	English site notices were placed at the boundary of project area, and other public places on 15th November 2022	Appendix D: Site Notice Report to be inserted in FDBAR
Announcement of draft BA and Regulation29 and 31 Amendment Report	Announcement of availability of the Draft BA and Regulation 29 and 31 Amendment Report was emailed to stakeholders together with the formal project announcement on 14th November 2022. The draft report is also available on the Digby Wells website (www.digbywells.com) under Public Documents. ***(30-day comment period for the draft BA and Regulations 31 Amendment Report: 14th November 2014 – 9th January 2023***	Appendix D: Announcement Letter
Consultation with Stakeholders	Engagement with key stakeholders will be done during the commenting period.	Appendix D: CRR to be included in FBAR.
Announcement of Final BA and Regulation29 and 31 Amendment Report	This draft BA and Regulation 31 Amendment Report will be updated with all comments received from I&APs and update for submission to the DMRE and simultaneously made available to I&APs for comment on the Digby Wells website (www.digbywells.com) under Public Documents.	

9.3 Summary of Issues Raised by I&APs

Views, concerns and objections provided by I&APs will be captured in the CRR following this public comment period. No comments on the project have been received to date.

9.4 The Environmental Attributes Associated with the Alternatives

This section provides a description of the baseline environment associated with the project area and region (where relevant). The purpose of understanding the environmental baseline conditions relates to the potential of the project to impact on the existing environment, and the potential for existing environmental aspects to influence a proposed development in terms of design, location, technology and layout.

A number of specialist studies were undertaken for the original application for EA and are appended to this report and shown in Table 9-2 below.

Table 9-2: Specialist Reports and Associated Appendices

Specialist Study	Appendix
Heritage Impact Assessment	Appendix E.1
Biodiversity Impact Assessment	Appendix E.2
Surface Water Assessment	Appendix E.3

Specialist Study	Appendix
Geohydrological Assessment	Appendix E.4
Air Quality Assessment	Appendix E.5
Noise Assessment	Appendix E.6
Rehabilitation and Closure Plan (RCP)	Appendix E.7

The subsection below provides the baseline bio-physical and socio-economic environmental conditions currently present on the project site. The information provided in this section has been obtained from the abovementioned specialist reports. Information was also obtained from previous studies undertaken which has been indicated accordingly.

9.4.1 Baseline Environment

Please note that as there is no change in the baseline environment from the recent EA compiled by Shangoni (Ref: LP30/5/1/2/3/2/1/58/EM), the baseline environment chapter has been extracted directly from the previous reports[1] as this remains appliable (Shangoni, 2021).

9.4.1.1 Type of Environment Affected by the Proposed Activity

9.4.1.2 Rainfall

The Mean Annual Precipitation (MAP) in this area varies between 300-400 mm, while the Mean Annual Evaporation (MAE) is approximately 2050 mm. The majority of rainfall periods occur between the months of October to April.

9.4.1.3 Temperature

The maximum temperature at Venetia Mine occurred during the month of October with the temperature reaching 41.5˚C, which is during spring. The minimum temperature was recorded during July (2.7˚C). The average temperatures are variable in the project area, ranging from 16.9 to 26.4˚C.

9.4.1.4 Geology

The following information was sourced from the report De Beers Consolidated Mine (Pty) Ltd: Venetia Mine, Geohydrological Impact Assessment as part of the Storm water Management Project, dated August 2021 and compiled by Shangoni Management Services (Pty) Ltd, as attached hereto in Appendix E.

The regional geology is dominated by the Limpopo Belt, which is located between the Kaapvaal and Zimbabwe Cratons. The Limpopo Belt comprises three zones i.e., Northern

[1] De Beers Consolidated Mine (Pty) Ltd: Venetia Mine Storm Water Management Project, Environmental Impact Assessment Report and Environmental Management Programme Report – FINAL, compiled by Shangoni, 14 December 2021

Marginal, Central and Southern Marginal and is a very complex geological province shaped by many tectono-metamorphic events. The Venetia Mine is situated in the Central Zone of the Limpopo Mobile Belt (Swazian Era).

The Limpopo Belt in the Venetia Mine area is believed to be 10 km thick and contains an ensemble of rocks known as the Beit Bridge Complex that comprises rocks of the Gumbu, Malala Drift and Mount Dowe Groups. This country rock at Venetia Mine comprises mainly quartzofeldspathic gneisses, marbles, gneisses, shists and other metasediments. These rocks have undergone numerous phases of shearing and folding. Outliers of Karoo rocks are present in the area. Diabase in the form of dolerite dykes and sills are also commonly found.

At Venetia Mine, kimberlite pipes are surrounded by four tectonic units. These units include the Gotha Granitic Complex, the Venetian Klippe, the Endora Klippe and the Krone Metamorphic Terrane. The Gotha Granitic Complex bounds the mine to the south and comprises mostly leucocratic tonalite, granodiorite and granite with minor lenses of amphibolite, quartzite and magnetite quartzite. The Fine Residue Deposit (FRDs) and Coarse Residue Deposit (CRD) are situated primarily on the Venetia Klippe unit that comprises four units, the lowermost being quartsofeldspathic gneiss and ortho-amphibolite. These rocks are overlain by an interlayered quartsofeldspathic gneiss, amphibolite and carbonate and calcsilicate rocks that in turn are overlain by a metasedimentary sequence of quartzite carbonate and calc-silicate rocks. The youngest unit comprises granite orthogneisses. The Endora Klippe unit lies to the north of the mine and is primarily comprised of quartzite and magnetite quartzite. Layers in this unit are folded around a north-north west trending axis. The Krone Metamorphic Terrane lies to the north-west, the area drained by the Kolope River. It comprises mostly of quartsofeldspathic gneisses with variable compositions ranging from granitic to tonalitic. Amphibolite, garnet-amphibolite and magnetite quartzite occur as lenses within the quartsofeldspathic gneisses. The contact between the Krone Metamorphic Terrane and the Venetia Klippe is exposed along the west and south-west edges of the klippe.

9.4.1.5 Topography and Sensitive Receptors

The following information was sourced from the De Beers Consolidated Mine (Pty) Ltd: Venetia Mine, Geohydrological Impact Assessment as part of the Storm water Management Project, compiled by Shangoni Management Services (Pty) Ltd, August 2021 (Appendix E).

The regional topography consists of low hills and wide valleys, varying in elevation from 700 Metres above mean sea level (mamsl) in the south to 600 metres above sea level (mamsl) at the topographical lows in the north. The surface topography and associated landscape within the mine's boundary has been altered by various mine residue deposits such as FRDs, CRDs, WRDs and the open pits, K1-K3 (Figure 9-1).

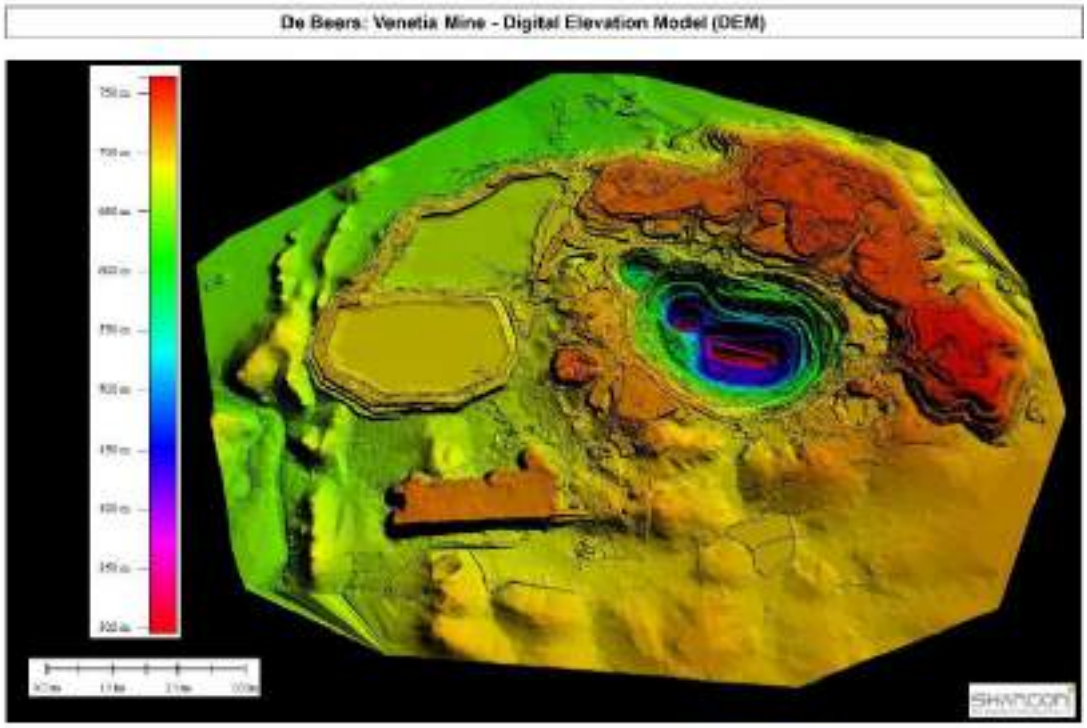

Figure 9-1: Digital Elevation Model (DEM) of Venetia Mine

Source: Shangoni, 2021

9.4.1.6 *Flora and Fauna*

The following information was sourced directly from the terrestrial biodiversity impact assessment for the proposed stormwater management project for De Beers Consolidated Mines Limited – Venetia Mine, which is situated near Alldays in the Limpopo province, compiled by Pachnoda Consulting and Bathusi Environmental Consulting, June 2021 (Appendix E).

9.4.1.6.1 *Flora Characteristics*

The regional floristic character is indicated as the Mopane Bioregion, which is spatially situated in the Savanna Biome. More specifically, the local region comprises two ecological types described by Mucina and Rutherford (2006) as the Musina Mopane Bushveld (SVmp1) and Limpopo Ridge Bushveld (SVmp2). The conservation status of both these units is indicated as 'Least Threatened' providing insight into the low local and regional transformation status. A review of regional floristic collection records in the wider study area (SANBI, NEWPOSA 2021) indicated the known presence of approximately 517 plant species within the wider study region, reflecting the high regional diversity context of the Savanna Biome and the local ecological types. However, a high paucity of site-specific, accurate and comprehensive floristic data for the local region is indicated from collection records.

9.4.1.6.2 Faunal Characteristics

Four regionally threatened and three near threatened mammal species are known to be present in the wider study region (Child *et al.*, 2016). Three of these species, namely Leopard (*Panthera pardus*), Serval (*Leptailurus serval*) and Brown Hyaena (*Hyaena brunnea*) exhibit a high probability of occurrence.

Another two species, the Lion (*Panthera leo*) and African Elephant (*Loxodonta africana*) are categorised on a national (regional) level as least concern (Child *et al.*, 2016), but were elevated to global threatened categories, with the Lion being globally vulnerable (Bauer *et al.*, 2016) and the African Elephant being globally endangered (Gobush *et al.*, 2021) by the IUCN (2021). Reasons for the elevation of the conservation status of these species were based on new molecular studies that have shown prominent differences in the phylogeography between disparate sub-populations that warrant the treatment of distinct "species" among the population elsewhere in Africa. For this reason, the IUCN has decided to treat the two elephant subspecies, the African Savanna Elephant (*Loxodonta african africana*) and the African Forest Elephant (*L. a. cyclotis*) as two different species. A similar approach is proposed for the lion population. However, the national sub-population of both the Lion and Elephant have remained stable or has even increased in large, protected areas, with most of the national population being adequately conserved in protected areas and national parks (Miller *et al.*, 2016; Selier *et al.*, 1016).

Irrespective of their least concern national conservation status, it is evident that both species remain dependent on conservation initiatives.

It must be noted that the proposed areas within this report are within disturbed areas within the MRA.

9.4.1.7 Hydrological Setting

The following information was obtained from the report De Beers Consolidated Mine (Pty) Ltd: Venetia Mine Surface Water Assessment in support of the proposed Storm Water Management Project, dated June 2021 and prepared by Shangoni Management Services. Refer to Appendix E for the specialist report.

Venetia Mine is situated within the Limpopo River primary catchment area and the Limpopo water management area. The Limpopo DWS is the responsible water authority.

The area of the quaternary catchment A63E area is approximately 1 992 km^2 with the Kolope being 527 km^2 and the Matotwane River 142 km^2. There are no perennial rivers on the mine property. The catchment area of the Kolope River at the confluence with the Matotwane River is 669 km^2. The flow record covers the period from October 1920 to September 2003. The Kolope River is located west of the Venetia Mine pit and flows northwards through the western corner of the Venetia Mine property. The Kolope is a non-perennial river that floods for short periods following heavy rainfall events in the catchment area. Flooding of the river does not bare consequence to the mine, due to its location outside the mining area. The Matotwane River is a tributary of the Kolope River. It is located east of the Venetia Mine pit and flows

northwards where it meets with the Kolope River around 9.5 km north of the mine site. A further 10 km north-east, the Kolope River joins with the Limpopo River.

9.4.1.8 Groundwater

The following information was obtained from the report De Beers Consolidated Mines (Pty) Ltd: Venetia Mine Geohydrological Impact Assessment as part of the Storm water Management Project, dated August 2021 and prepared by Shangoni AquiScience. Refer to Appendix E for the specialist report.

According to the 1:500 000 hydrogeological map (2127) for Messina the study area is predominantly located in a d3 and d4 aquifer class region. The groundwater yield potential is classed as low to medium on the basis that most of the boreholes on record in vicinity of the study area produce between 0.5 and 5.0 ℓ/s.

According to the regional aquifer classification map of South Africa, the aquifer has been identified as a poor/non- aquifer with poor groundwater quality (300 - 1000 mS/m, a medium vulnerability and a medium to high susceptibility towards contamination. Drill logs (Jones Wagener, 2020b) indicate that the study area is underlain by two types of aquifers.

Based on the ‘undisturbed’ underlying hydrogeology of the project area, the aquifers can be classified as follows according to the Parsons (1995) classification system:

- Weathered unconfined aquifer.
  - Poor/non- aquifer
- Fractured confined or semi-confined aquifer.
  - Poor/non- aquifer

For the LoM plumes it is evident that enough residence time has allowed contaminated groundwater to have migrated into the fractured aquifer for most of the sources. However, they concluded that the plumes from the PCDs do not migrate substantially and even after 120 years, will remain small and localised within the mine boundary. No sensitive groundwater receptors will be impacted during the operational phase. Groundwater monitoring locations are presented in Figure 9-2 below.

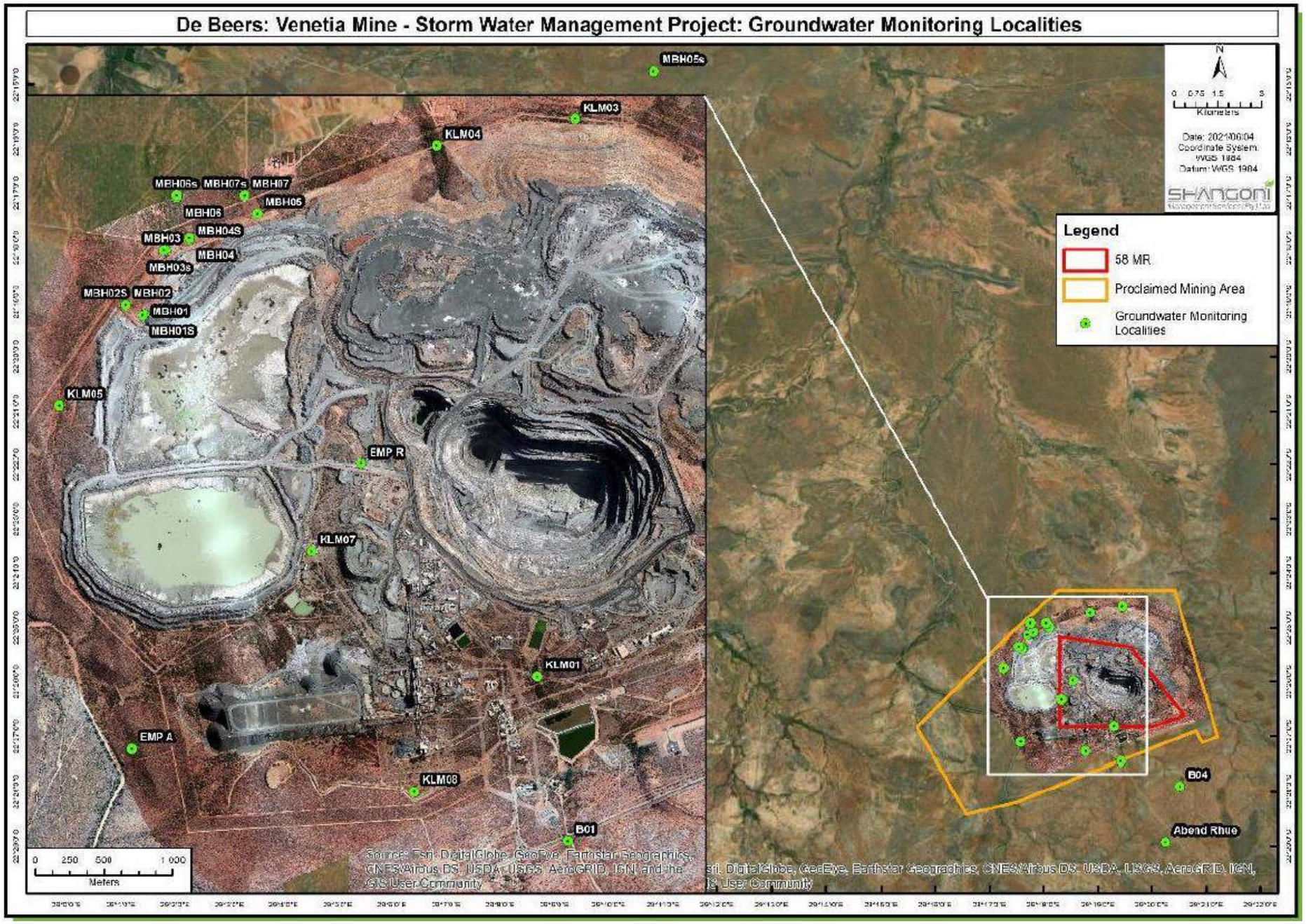

Figure 9-2: Groundwater Monitoring Locations

Source: Shangoni, 2021

9.4.1.9 Air Quality

Information was obtained from the following reports:

- Environmental Impact Assessment for Proposed Underground Operations and EMP Consolidation for Existing Operations at De Beers Consolidated Mines, Venetia Mine, Limpopo Province, Final Report, dated February 2012 and compiled by ERM; and
- Annual ambient air quality monitoring report for Venetia Mine, Limpopo Province, Reporting period February 2020 - January 2021, and compiled by Levego Environmental Services. Refer to Annexure E5 for the report.

Venetia Mine and the surrounding land have no other large-scale industrial or mining activity in the area (<5km away from Venetia Mine), except for the current mining operations at Venetia Mine. The area is characterised as an area that is sparsely populated with the closest town being Musina (± 75km east)band Alldays (± 40 km west). The following sources of air emissions have been identified in the area:

- Mining activities in the region;
- Road network;
- Windblown dust;
- Vehicle tailpipe emissions; and
- Agricultural activities in the region.

Venetia Mine has implemented a dust fallout monitoring network that includes 25 samplers (17 samplers that monitor dustfall around the stockpile areas, slimes dams, as well as along the site boundary and eight monitoring sites that specifically address the dustfall from the open burning grounds area). The analysed samplers from the majority of monitoring sites returned dustfall rates lower than the non-residential standard (1 200 mg/m^2/day).

It is noted that an amendment and variation application is occurring as a concurrent process.

9.4.1.10 Noise

The following information was sourced from the report Baseline noise survey along the boundaries of the Venetia Mine – 2020, dated 22 October 2020 and compiled by dBAcoustics, as attached hereto as Appendix E.

Sixteen noise measuring points have been identified along the boundaries of the mine to determine the noise levels of the mining activities at Venetia Mine. The noise survey was carried out on 21 October 2020 and 22 October 2020 during the day- and night-time. The temperature during the day was between 31.2ºC to 35.1ºC and during the night 24.1ºC to 26.5ºC.

The noise levels at the measuring points along the Venetia Mine boundaries were well below the 70.0 dBA threshold value according to SANS 10103 of 2008.

The prevailing noise levels at the measuring points along the boundaries of the mining area were in line with the recommended noise levels as prescribed in SANS 10103 of 2008 and the Health and Safety Regulations of the International Finance Corporation (IFC).

9.4.1.11 Heritage

Table 9-3 presents a summary of the heritage resources identified during the available heritage resources undertaken on the Venetia Mine property to date.

Table 9-3: Heritage Resources Identified within the Venetia Mine

Heritage Resource and Reference	Description
Venetia 103 **TVT1/1, TVT1/2** (Pistorius, 2011)	Farming Community (Iron Age) village comprising multiple sites associated with the Khami period (1400 to 1750 CE). Quartz outcrops were observed and had been mined for building materials. The Venetia 103 sites are marked by stone walls or lines with platforms and circles representing the remains of huts. Cattle enclosures, grain bin stands, and midden and undiagnostic potsherds are present.
Venetia 103 **TVT3/1, TVT3/2, TVT3/3, TVT3/4** (Pistorius, 2011)	Farming Community (Iron Age) village comprising multiple sites associated with the Khami period (1400 to 1750 CE). The Venetia 103 sites are marked by stone walls or lines with platforms and circles representing the remains of huts. Cattle enclosures, grain bin stands, and midden and undiagnostic potsherds are present. This site includes twelve grain bin stands, cattle kraals and collapsed houses. These sites are situated on low hills. *Sites TVT3/1, TVT 3/2 and TVT3/3 have been excavated under Permits 2087, 2084 and 2086 respectively. The final permit reports for Permit 2086 and 2087 have not been uploaded to the SAHRIS database. The final report for Permit 2084 has been submitted to SAHRIS, but is not publicly available.*
Elesger 98 (Pistorius, 2011)	Farming Community (Iron Age) village comprising one site, potentially associated with the Khami period (1400 to 1750 CE). The Venetia 103 sites are marked by stone walls or lines with platforms and circles representing the remains of huts. Cattle enclosures, grain bin stands, and midden and undiagnostic potsherds are present. This site is located along the hillside and on a flat surface. Some of the stone lines have been disturbed and may have been mixed with stones from road construction. *This site has been excavated under Permit 2083. The permit report has not been uploaded to the SAHRIS database.*

Heritage Resource and Reference	Description
Venetia 103 **TVT2/1** (Pistorius, 2011)	A limited surface collection of Middle Stone Age (MSA) stone tools (dating to approximately 20 to 30 kya). This scatter occurs along a south-facing slope and includes: four prepared platform cores, one strangulated scraper, one scraper and multiple flakes.
Venetia 103 **Graveyard** (Pistorius, 2011)	A graveyard belonging to the Venter family. This graveyard includes one double grave and three additional single graves. All the graves have granite headstones and trimmings. Legible inscriptions date the graves to 1959 and 1973. The grave is demarcated by a fence.

It must be noted that the proposed activities do not occur in proximity of sensitive heritage features on site.

9.4.1.12 Social

The following information was obtained from the Musina Local Municipality, 2021 / 2022 Final Integrated Development Plan (IDP).

9.4.1.12.1 Population Growth Trends

The Musina Local Municipality's population, in 2001, was at 39 310 and by Census 2011 the population was at 68 359, and by Community Survey 2016 the population is at 132 009. The population growth from 2001 Census, 2011 Census and Community survey 2016 is at 63 650. Musina Local Municipality population growth is 63 650 compared to the District municipality's population growth of 99 228.

9.4.1.12.2 Population Groups - Race

The dominant population group is black Africans at 127 621 of the total population followed by whites at 3 645 and the least population group being coloured at 337.

9.4.1.12.3 Population Groups - Age

The major population by age, of Musina Local Municipality is dominated by the youth aged between 15-34 years and account for 58 841 of the total population.

9.4.1.12.4 Gross Domestic Product ("GDP")

The greatest contributor to the Vhembe District Municipality economy is the Makhado Local Municipality with a share of 32.87% or R 20.8 billion, increasing from R 9.02 billion in 2008. The economy with the lowest contribution is the Musina Local Municipality with R 8.62 billion growing from R 3.6 billion in 2008. When looking at the regions within the Vhembe District Municipality it is expected that from 2018 to 2023 the Musina Local Municipality will achieve the highest average annual growth rate of 1.98%. The region that is expected to achieve the second highest average annual growth rate is that of Makhado Local Municipality, averaging

1.88% between 2018 and 2023. On the other hand, the region that performed the poorest relative to the other regions within Vhembe District Municipality was the Thulamela Local Municipality with an average annual growth rate of 1.61%.

9.4.1.12.5 Gross Value Added

In 2018, the community services sector is the largest within Vhembe District Municipality accounting for R17.7 billion or 32.2% of the total Gross Value Add (GVA) in the district municipality's economy. The sector that contributes the second most to the GVA of the Vhembe District Municipality is the finance sector at 17.6%, followed by the trade sector with 17.3%. The sector that contributes the least to the economy of Vhembe District Municipality is the agriculture sector with a contribution of R1.61 billion or 2.94% of the total GVA. The community sector, which includes the government services, is generally a large contributor towards GVA in smaller and more rural local municipalities. When looking at the regions within the district municipality, the Makhado Local Municipality made the largest contribution to the community services sector at 32.85% of the district municipality. As a whole, the Makhado Local Municipality contributed R18 billion or 32.71% to the GVA of the Vhembe District Municipality, making it the largest contributor to the overall GVA of the Vhembe District Municipality.

9.4.2 Description of the Current Land Uses

The current land use within the MRA is mining activities and administrative offices.

9.4.3 Description of Specific Environmental Features and Infrastructure on the Site

The proposed activities occur primarily in disturbed areas within the MRA.

9.4.4 Environmental and Current Land Use Map

Figure 9-3 below provides the current mine layout.

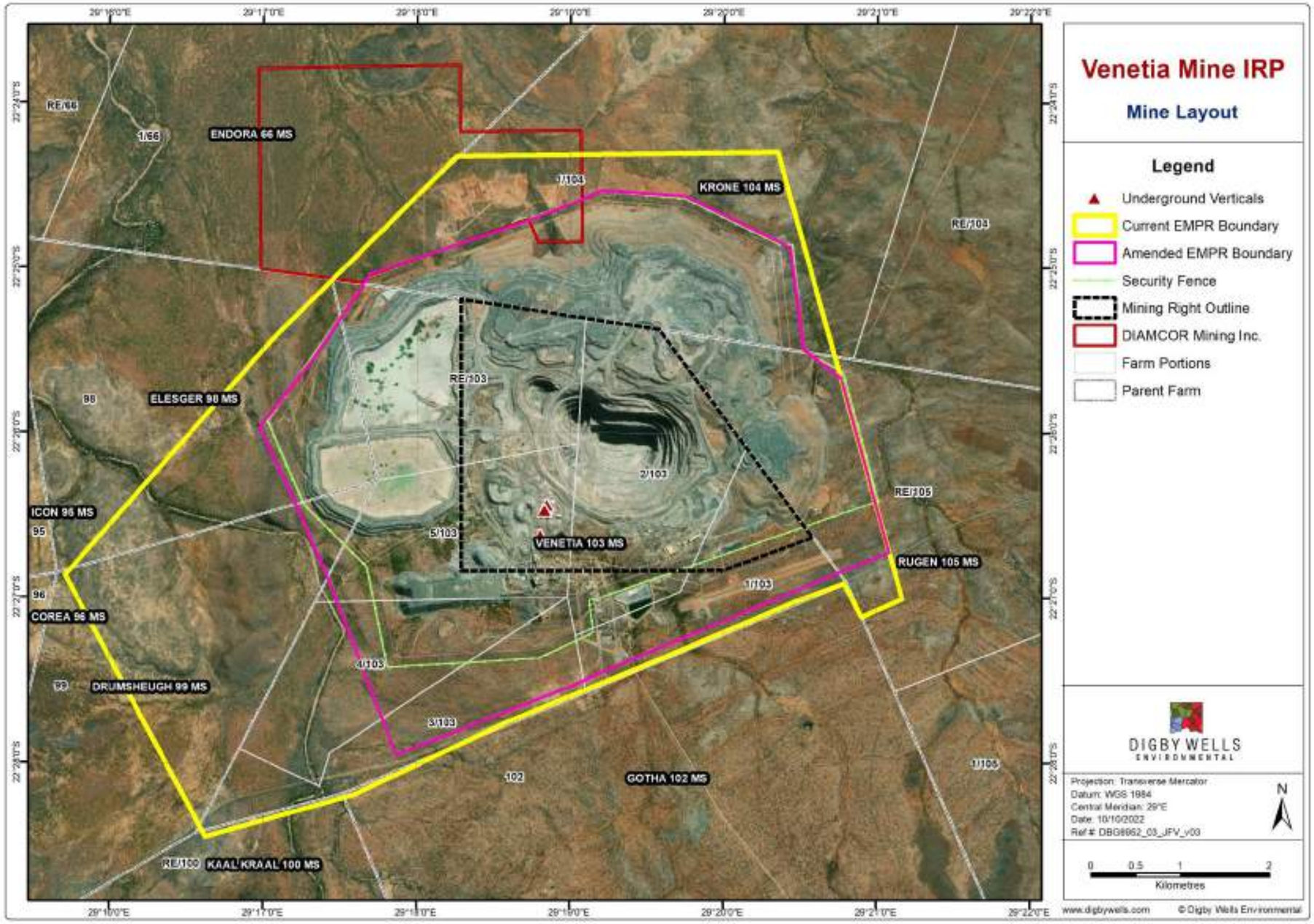

Figure 9-3: Current Mine Layout and Proposed Amended EMPR Boundary

9.5 Impacts and Risks Identified including the Nature, Significance, Consequence, Extent, Duration and Probability of the Impacts, including the Degree to which these Impacts

This section aims to rate the significance of the identified potential impacts pre-mitigation and post-mitigation.

The impact assessment provided in Section 11 only considers impacts associated with the proposed new activities trigged and indicated in Section 5. The potential impacts of activities associated with the current Ventia Operation were assessed and approved as part of the Venetia EA and EMPr (Ref. No.:14/12/16/3/1/9).

Additional activities and amendments which are applied for within this application are complimentary to the activities on site. The existing EMPr includes impacts and mitigation measures which address the new activities and amended activities. Therefore, no impacts for the construction of the mine as well as mining activities that have already occurred have been assessed.

9.6 Methodology used in Determining and Ranking the Nature, Significance, Consequence, Extent, Duration and Probability of Potential Environmental Impacts and Risks

Details of the impact assessment methodology used to determine the significance of physical, bio-physical and socio-economic impacts are provided below.

The significance rating process follows the established impact/risk assessment formula:

Significance = CONSEQUENCE X PROBABILITY X NATURE

Where

Consequence = intensity + extent + duration

And

Probability = likelihood of an impact occurring

And

Nature = positive (+1) or negative (-1) impact

The matrix calculates the rating out of 147, whereby intensity, extent, duration and probability are each rated out of seven as indicated in Table 9-4. The weight assigned to the various parameters is then multiplied by +1 for positive and -1 for negative impacts.

Impacts are rated prior to mitigation and again after consideration of the mitigation measure proposed in the previous EIA report by Shangoni (14 December 2022). The significance of an impact is then determined and categorised into one of eight categories (The descriptions of the significance ratings are presented in Table 9-4).

It is important to note that the pre-mitigation rating takes into consideration the activity as proposed, (i.e., there may already be some mitigation included in the engineering design). If the specialist determines the potential impact is still too high, additional mitigation measures are proposed.

Table 9-4: Impact assessment parameter ratings

Rating	Intensity/Replaceability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	**Positive Impacts (Nature = +1)**			
7	Irreplaceable loss or damage to biological or physical resources or **highly** sensitive environments. Irreplaceable damage to **highly sensitive** cultural/social resources.	Noticeable, on-going natural and / or social benefits which have improved the overall conditions of the baseline.	International The effect will occur across international borders.	Permanent: The impact is irreversible, even with management, and will remain after the life of the project.	Definite: There are sound scientific reasons to expect that the impact will definitely occur. >80% probability.
6	Irreplaceable loss or damage to biological or physical resources or **moderate to highly** sensitive environments. Irreplaceable damage to cultural/social resources of **moderate to highly** sensitivity.	Great improvement to the overall conditions of a large percentage of the baseline.	National Will affect the entire country.	Beyond project life: The impact will remain for some time after the life of the project and is potentially irreversible even with management.	Almost certain / Highly probable: It is most likely that the impact will occur. <80% probability.

Rating	Intensity/Replaceability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	**Positive Impacts (Nature = +1)**			
5	Serious loss and/or damage to physical or biological resources or **highly** sensitive environments, limiting ecosystem function. Very serious widespread social impacts. Irreparable damage to highly valued items.	On-going and widespread benefits to local communities and natural features of the landscape.	Province/ Region Will affect the entire province or region.	Project Life (>15 years): The impact will cease after the operational life span of the project and can be reversed with sufficient management.	Likely: The impact may occur. <65% probability.
4	Serious loss and/or damage to physical or biological resources or **moderately** sensitive environments, limiting ecosystem function. On-going serious social issues. Significant damage to structures / items of cultural significance.	Average to intense natural and / or social benefits to some elements of the baseline.	Municipal Area Will affect the whole municipal area.	Long term: 6-15 years and impact can be reversed with management.	Probable: Has occurred here or elsewhere and could therefore occur. <50% probability.

Rating	Intensity/Replaceability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	**Positive Impacts (Nature = +1)**			
3	Moderate loss and/or damage to biological or physical resources of **low to moderately** sensitive environments and, limiting ecosystem function. On-going social issues. Damage to items of cultural significance.	Average, on-going positive benefits, not widespread but felt by some elements of the baseline.	Local Local extending only as far as the development site area.	Medium term: 1-5 years and impact can be reversed with minimal management.	Unlikely: Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur. <25% probability.
2	**Minor loss and/or effects** to biological or physical resources or low sensitive environments, not affecting ecosystem functioning. Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected.	Low positive impacts experience by a small percentage of the baseline.	Limited Limited to the site and its immediate surroundings.	Short term: Less than 1 year and is reversible.	Rare / improbable: Conceivable, but only in extreme circumstances. The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate mitigation measures. <10% probability.

Rating	Intensity/Replaceability		Extent	Duration/Reversibility	Probability
	Negative Impacts (Nature = -1)	**Positive Impacts (Nature = +1)**			
1	**Minimal to no loss** and/or effect to biological or physical resources, not affecting ecosystem functioning. Minimal social impacts, low-level repairable damage to commonplace structures.	Some low-level natural and / or social benefits felt by a very small percentage of the baseline.	Very limited/Isolated Limited to specific isolated parts of the site.	Immediate: Less than 1 month and is completely reversible without management.	Highly unlikely / None: Expected never to happen. <1% probability.

9.7 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

Unplanned events may occur during the project that may have potential impacts which will need mitigation and management. The key risks that will be associated with the Venetia operation which could potentially result in contamination of water resources and soil contamination include:

- Hydrocarbon and other hazardous material spillages from vehicles, machinery and storage facilities.

Table 9-5 below is a summary of the identified Project activities that may pose a risk. Not all potential unplanned events may be captured herein and this must therefore be managed by Venetia throughout all phases.

Table 9-5: Unplanned Events, Low Risks and their Management Measures

Potential Project Risk (Unplanned Occurrences)	Aspect Potentially Impacted	Mitigation / Management / Monitoring
Hydrocarbon spills from vehicles and heavy machinery, hazardous materials or waste storage facilities.	• Surface water; • Groundwater; and • Soil contamination.	• Regular maintenance; and • When spillages occur, these must be cleaned up when identified.
Spillages/ leaks from pipelines and dirty water containment facilities.		• Hydrocarbons and hazardous materials must be stored in bunded areas; • Refuelling should take place in contained areas; • The Material Safety Data Sheets (MSDS) should be kept on site for reference purposes regarding handling, storage and disposal of hazardous materials; • Ensure that oil traps are well maintained; • Vehicles and heavy machinery should be serviced and checked on a regularly basis to prevent leakages and spills; and • Hazardous waste generated onsite must be disposed of at a licenced hazardous waste facility. Safe disposal certificates must be retained for all hazardous waste removed from site.

9.7.1 Cumulative Impacts

Cumulative effects are caused by the accumulation and interaction of multiple stresses affecting the parts and the functions of ecosystems. Of particular concern is the knowledge that ecological systems sometimes change abruptly and unexpectedly in response to apparently small incremental stresses. For purposes of this report, cumulative impacts have been defined as “the changes to the environment caused by an activity in combination with either past, present and reasonably foreseeable human activities.”

The subsections below generally discuss cumulative impacts associated with the environmental impacts assessed.

9.7.2 Floral Impacts

Clearance of vegetation is required for the proposed activities. This occurs within the approved MRA and EMPr boundary and the impacts and mitigation measures will still be applicable.

9.7.3 Surface Water

No impact on surface water is anticipated.

9.7.4 Nuisance Impacts

In terms of noise pollution, the project is not expected to contribute to the cumulative impacts or exacerbate current noise levels. This is primarily due to noise propagation not measuring above the rating levels of the surrounding suburban and rural receptors. Furthermore, the cumulative visual impact on the surrounding environment and receptors is low due to the large scale degradation caused by the numerous existing mixed land uses in the project area and surrounds.

9.8 The Possible Mitigation Measures that could be Applied and the Level of Risk

Mitigation measures for each identified impact have been included within the approved EMPr.

The existing EMPr encompasses all required mitigation measures required, however the proposed mitigation measures that have been provided within this report need to be read in conjunction with the existing mitigations measures that are currently in place.

9.9 Motivation where No Alternative sites were considered

The alternatives considered for the project include activity, location process / design, routing alternatives as well as a “No-Go” alternative. These have been detailed in Section 9.1.4 above.

9.10 Statement Motivating the Alternative Development Location within the Overall Site

The locations of the proposed new activities associated with this application have been determined based on impacts caused by current activities or based on their intended use.

All other existing development footprints associated with the Venetia operation have previously been approved and established accordingly. The alternatives presented in subsequent subsections therefore only pertain to proposed new activities at Venetia which compliment the approved activities.

10 Full Description of the Process Undertaken to Identify, Assess and Rank the Impacts and Risks the Activity Will Impose on the Preferred Site (In Respect of the Final Site Layout Plan) Through the Life of The Activity

The identification, assessment and ranking of potential new impacts associated with the proposed project were informed by the environmental and technical specialist investigations undertaken. The determined site sensitivities were also considered in the selection of the preferred project site for proposed new activities at Venetia. The new impacts associated with the new activities are presented in Table 11-1.

11 Assessment of Each Identified Potentially Significant Impact and Risk

Table 11-1 presents the potential impacts assessed per project activity and per phase as well as their proposed mitigation / enhancement measures.

Table 11-1: Assessment of each Identified Impact as per each Activity

Activity	Potential Impact	Aspects Affected	Phase	Significance	Mitigation Type	Significance
Construction (associated with the clearance of vegetation) and Construction of clean water attenuation pond.	Site clearance resulting in potential soil erosion, dust generation and soil compaction and consequently loss of topsoil.	Soil, Land Use and Land Capability	Construction	Minor (negative)	• Minimise through site clearing procedures; • Minimise through Stormwater Management Plan; and • Minimise through Dust Monitoring Programme.	Negligible (negative)
	Site clearance resulting in the establishment Alien Invasive Plants (AIPs), further altering the natural vegetation profiles of freshwater resources.	Biodiversity; and Freshwater systems	Construction	Minor (negative)	• Control through AIP Management Plan; and • Control through Rehabilitation Plan.	Negligible (negative)
	Noise disturbance from construction machinery and vehicles (however not expected to impact any receptors).	Noise	Construction	Negligible (negative)	• Avoid through project designs; and • Avoid through Vehicle and Machinery Maintenance Plan.	Negligible (negative)
	Noise disturbance from operational and maintenance activities (however not expected to impact any receptors).	Noise	Operational	Negligible (negative)	• Avoid through project designs; and • Avoid through Vehicle and Machinery Maintenance Plan.	Negligible (negative)

12 Summary of Specialist Reports

The following specialist reports were previously conducted and include the area in which this application occurs:

Table 2: Specialist Studies

Assessment	Compiler	Year
Heritage Impact Assessment	Digby Wells	2022 (Consolidated Report)
Wetland and Watercourse assessment	Shangoni Management Services (Pty) Ltd	2021
Biodiversity Impact Assessment	Shangoni Management Services (Pty) Ltd	2021
Palaeontological Impact Assessment	University of the Witwatersrand	2021
Geohydrological Impact Assessment	Shangoni Management Services (Pty) Ltd	2021
Surface Water Assessment	Shangoni Management Services (Pty) Ltd	2021
Noise Monitoring Report	dB Acoustics	2020
Air Quality Monitoring Report	Levego Environmental Services	2020-2021

Kindly refer to Section 329.4.1 for a summary of specialist report baseline information. Please note that specialist report recommendations have been included in the approved EA and EMPr.

The existing EMPr encompasses all required mitigation measures required, however the proposed mitigation measures that have been provided within this report need to be read in conjunction with the existing mitigations measures that are currently in place.

13 Environmental Impact Statement

13.1 Summary of the Key Findings of the Environmental Impact Assessment

Venetia Mine is an existing operation. New activities are being proposed at the operations which are the primary focus of this draft BA and Regulation 31 Amendment Report.

Should mitigation measures included in the approved EMPr be suitably implemented, the impacts are deemed to be minor. It is therefore recommended that the EMPr previously approved is deemed to be applicable for this application.

The existing EMPr encompasses all required mitigation measures required, however the proposed mitigation measures that have been provided within this report need to be read in conjunction with the existing mitigations measures that are currently in place.

13.2 Final Site Map

The final site map is found below and attached as Appendix B.

13.3 Summary of the Positive and Negative Implications and Risks of the Proposed Activity and Identified Alternatives

The key positive implication is the continued, streamlined operation of Venetia Mine.

The key negative implications include the loss of vegetation and topsoil resources.

Mitigation and management measures (within the EMPr) have been proposed for each identified impact associated with the proposed new activities. Should these be correctly implemented the significance of all impacts can be reduced to negligible significance.

14 Proposed Impact Management Objectives and the Impact Management Outcomes for inclusion in the EMPr

The EMPr seeks to achieve a required end state and describes how activities that have, or could have, an adverse impact on the environment and surrounding communities will be mitigated, controlled and monitored. The key objectives of the EMPr therefore are:

- To minimise the extent of an impact during the life of the project;
- To ensure appropriate restoration of areas affected by the project; and
- To prevent long term environmental degradation.

The existing EMPr encompasses all required mitigation measures required, however the proposed mitigation measures that have been provided within this report need to be read in conjunction with the existing mitigations measures that are currently in place. Crucial mitigation measures include:

- Checks must be carried out at regular intervals to identify areas where erosion is occurring;
- Disturbed areas should be limited to the footprint;
- Disturbed areas should be limited to the footprint;
- Alien vegetation monitoring and control throughout construction and operational phases; and,
- Rehabilitation and monitoring should take place throughout construction and operational phases.

15 Aspects for Inclusion as Conditions of Authorisation

The following is recommended as a condition of authorisation:

16 Description of any Assumptions, Uncertainties and Gaps in Knowledge

The findings presented are based on professional experience, supported by a literature review, and extrapolated from the data collected at the time of field surveys conducted.

17 Reasoned Opinion as to whether the Proposed Activity should or should not be Authorised

17.1 Reasons why the Activity should be authorised or not

The proposed activities that are subject to this application are planned to ensure better and lawful environmental practices at the operation, as well as to enable the optimisation of the operation.

Various specialist studies were undertaken as part of the original EA process with the objective of identifying and weighing anticipated impacts and risks associated with the transition to underground mining. The findings of the impact assessment have shown that the new activities and amendments will have impacts on the receiving environment, namely; vegetation clearance and the loss of topsoil on cleared land. Due to the current disturbed nature of a large portion of the project area and the extent of the activities, the majority of identified impacts are expected to be of minor or negligible negative significance.

Based on the assessment of the potential negative and positive impacts associated with the project, it is concluded that the proposed project should be authorised. No long-term negative impacts are expected to arise from the new activities proposed and the amendment. In fact, it is expected that these activities will enhance the existing Venetia operation should the proposed mitigation measures be correctly implemented.

17.2 Conditions that must be included in the Authorisation

The following is recommended as a condition of authorisation:

18 Period for which the Environmental Authorisation is Required

The approved LoM for the Venetia operation is 24 years (until 2046). The consolidated EA should be aligned to this LoM.

19 Undertaking

The undertaking required to meet the requirements of this section is provided at the start of this document and is applicable to the BA and Regulation 29 and 31 Amendment Report.

20 Financial Provision

The quantum was calculated to be R864,345,625.66 (based on 2021 closure liability update and year-one costs of stormwater management project provisioned upfront). It must be noted that this quantum is adjusted annually in line with the annual Basis of Estimate Report. Any new infrastructure will be assessed with the provision to be adjusted accordingly.

20.1 Explain how the aforesaid amount was derived

Total cost is based on 2021 closure liability update (R829 291 277,88) and year-one costs of stormwater management project (R 35 054 347.78) provisioned upfront.

20.2 Confirm that this amount can be provided for from operating expenditure

The Closure Cost Assessment addresses all aspects associated with the infrastructure associated currently with the Venetia Open Pit (VOP) and VUP and is aligned to the requirements of GN R1147.

21 Specific 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 NEMA. the BA Report must include the:-

21.1 Impact on the Socio-Economic conditions of any directly affected person

The proposed activities compliment existing activities and no additional impact has been identified.

21.2 Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

The proposed activities complement existing activities and no additional impact has been identified.

22 Other Matters Required in terms of sections 24(4)(a) and (b) of the Act

No other matters have been identified.

Part B: Environmental Management Programme Report

1 Details of the EAP

Digby Wells has been appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the IRP. The details of the EAP are provided in Table 2-2 below.

Table 1-1: Environmental Assessment Practitioner Details

Company name:	Digby Wells Environmental
Contact person:	Mia Smith
Physical address:	48 Grosvenor Road, Bryanston, 2125
Telephone:	011 789 9495
Cell phone:	066 269 4345
Email:	Mia.smith@digbywells.com

1.1 Expertise of the EAP

1.1.1 The Qualifications of the EAP

Mia Smith holds an MSc Geography from the University of Johannesburg. Please refer to Appendix A for the EAP's curriculum vitae and qualification certificates.

1.1.2 Summary of the EAP's Past Experience

Mia Smith is the Divisional Manager of Environmental and Legal Services at Digby Wells. She has 15 years of experience in environmental consulting with expertise in Project Management, Environmental Auditing, Legal Compliance, Risk Management, Environmental Management Systems, Resettlement Action Planning and Social Closure.

2 Description of the aspects of the activity

Below indicates the new activities that are being applied for:

- Additional pipelines to transport dangerous goods, such as hydrocarbons (diesel);
- Construction of the clean water attenuation pond and several small underground water storage dams;
- AEL variation application that is underway
- Storage of hydrocarbons at underground and surface;
- Decommissioning of facilities and infrastructure;
- Expansion of the Waste Rock Dumps (WRD) and Red Area Tailings Footprint;
- Clearance of vegetation.

2.1 Transpiration of Dangerous Goods

The expansion of facilities or infrastructure for the bulk transportation and storage of dangerous goods to address the mine's future needs. This will include the construction of additional pipelines to transport dangerous goods and hydrocarbon storage requirements at the underground and surface workshops. As this activity has been applied for and authorised in the EA (Ref. No. 12/1/9/2-V9), the new pipelines will constitute an amendment of the details of the EA only

2.2 Construction of a Clean Water Attenuation Pond and Underground Water Storage Dams

A clean water attenuation pond will be constructed south of Pollution Control Dam (PCD) 1 (Coordinates: 22° 26' 49.00"S 29° 19 14'.17"E) to attenuate clean runoff reporting to this natural low-lying area and will have a storage capacity of 74 000 m^3.

Several small underground water storage dams will also be constructed ranging from 90m^3 – 450m^3

2.3 Administrative Amendment of the EMPr

2.3.1 Regulation 29 Amendments

The approved EMPr does not explicitly mention the include the existing underground decline shaft; however, has included two shafts. The change in the access mining method will not in itself trigger a listed activity. However, it could be included as a non-substantive amendment, as the change has no new additional impacts based on the initial approval and no other person's rights will be affected by the change. The decline shaft will be included as a non-substantive amendment. This amendment to the details of the EMPr will require a Regulation 29 Amendment Application in terms of the EIA Regulations, 2014.

The EMP Boundary will be amended to reflect the same footprint as the mine's operational boundary (current and future operational areas) as well as exclude majority of the neighbouring mine's (Diamcor Incorporated) Mining Right area which falls within Venetia's security fence.

2.3.2 Regulation 31 Amendments

Lastly there will be expansion to the WRD and Red Tailings area. The expansion of the WRD and Red Tailings area can be considered a change in the nature of the impact, thus requiring a Regulation 31 Amendment (substantive amendment), however will be managed according to the current approved authorisation, which addresses all associated impacts and provides the required mitigations.

2.3.3 Atmospheric Emissions Licence Variation Application

An Atmospheric Emissions Licence Variation Application is currently underway.

2.3.4 WML Administrative Amendments

Waste generated from the VUP will be temporarily stored underground before being transferred onto the existing licensed facility on site (Ref. No. WML 12/4/10/08 – A/9/V1/A1). It is important to note that the mine has an existing WML with some of the conditions that are not applicable, as identified by previous audit findings as discussed below and an administrative process is being followed to amend these conditions.

Based on the WML Compliance Audit undertaken by Tabacks, in 2020 *various findings have highlighted that some conditions are not appropriate for Venetia Mine's activities and geographic location.* Tabacks advised the following: "*It is advised, as agreed upon with the DMRE, that Venetia should apply for an amendment of its WML*"

Based on the WML Compliance Audit undertaken by Tabacks in 2020, the following administrative changes included in Table 2-1 are required. Based on the correspondence and engagement with the DMRE, this EA application forms part of the amendment to the WML conditions, however, a separate notification will also be sent to the DMRE requesting these administrative changes to be made to the existing WML.

A separate WML administrative notification amendment application form will be submitted to the DMRE noting these changes that are required to the WML.

Table 2-1: Amendment of the WML

Condition Number	Description of Condition	Comments Raised in Audit	Condition
Condition 12 – Monitoring Committee	12.1 - The Licence Holder must take all reasonable steps to maintain and ensure the continued functioning of a Monitoring Committee for the normal operative lifetime of the site and for a period of at least two (2) years after the closure of the site, or such longer period as may be determined by the Department. 12.2 - The Monitoring Committee must formulate the terms of reference and code of conduct, according to the Minimum Requirements, Second Edition. 12.3 - The Monitoring Committee must be representative of relevant interested and affected persons as recommended in the Minimum Requirements and may comprise: • Licence Holder and/or his appointed consultant(s) or advisors(s); • Representative(s) of the Health, Environment and/or	Venetia operates in a security sensitive area, and there are no public or town councils in close proximity to the mine that can be deemed as relevant stakeholders, it is therefore argued that these conditions should not apply to the mine due to its specific site activities and location. During a meeting held between Venetia and DMRE relating to the above issued, the DMRE representative had indicated that, in principal he did not have any objections to remove this requirements, however, he required confirmation from LEDET as to the reason for inclusion of the said condition before making a final decision on the matter. Based on the correspondence and engagement with the DMRE, this EA application forms part of the amendment to the WML conditions. A separate notification will also be sent to the DMRE requesting these	Conditions assessed and are not applicable and should be removed.

Condition Number	Description of Condition	Comments Raised in Audit	Condition
	Waste Departments of the relevant Local Authority; • At least two (2) representative(s) of this Department; and • At least three (3) persons/parties, or their representatives elected by the local community. Condition 12.4 - The Monitoring Committee must meet at least twice a year and not later than 30 days after the external audit report specified in condition 9.2.1 has been submitted according to condition 9.2.3. Condition 12.5 - The Licence Holder must keep minutes of all meetings of the Monitoring Committee and distribute these minutes to all members of the Monitoring Committee within 14 days after the meeting.	administrative changes to be made to the existing WML.	

2.3.5 New Activities

Clearance of vegetation associated with the expansion of the Waste Rock Dump WRD) and Red Tailings area and the clean water attenuation pond will result in 14.52 ha of vegetation being cleared.

3 Composite Map

Figure 3-1 superimposes the proposed activity, its associated structures, and infrastructure on the surrounding environment

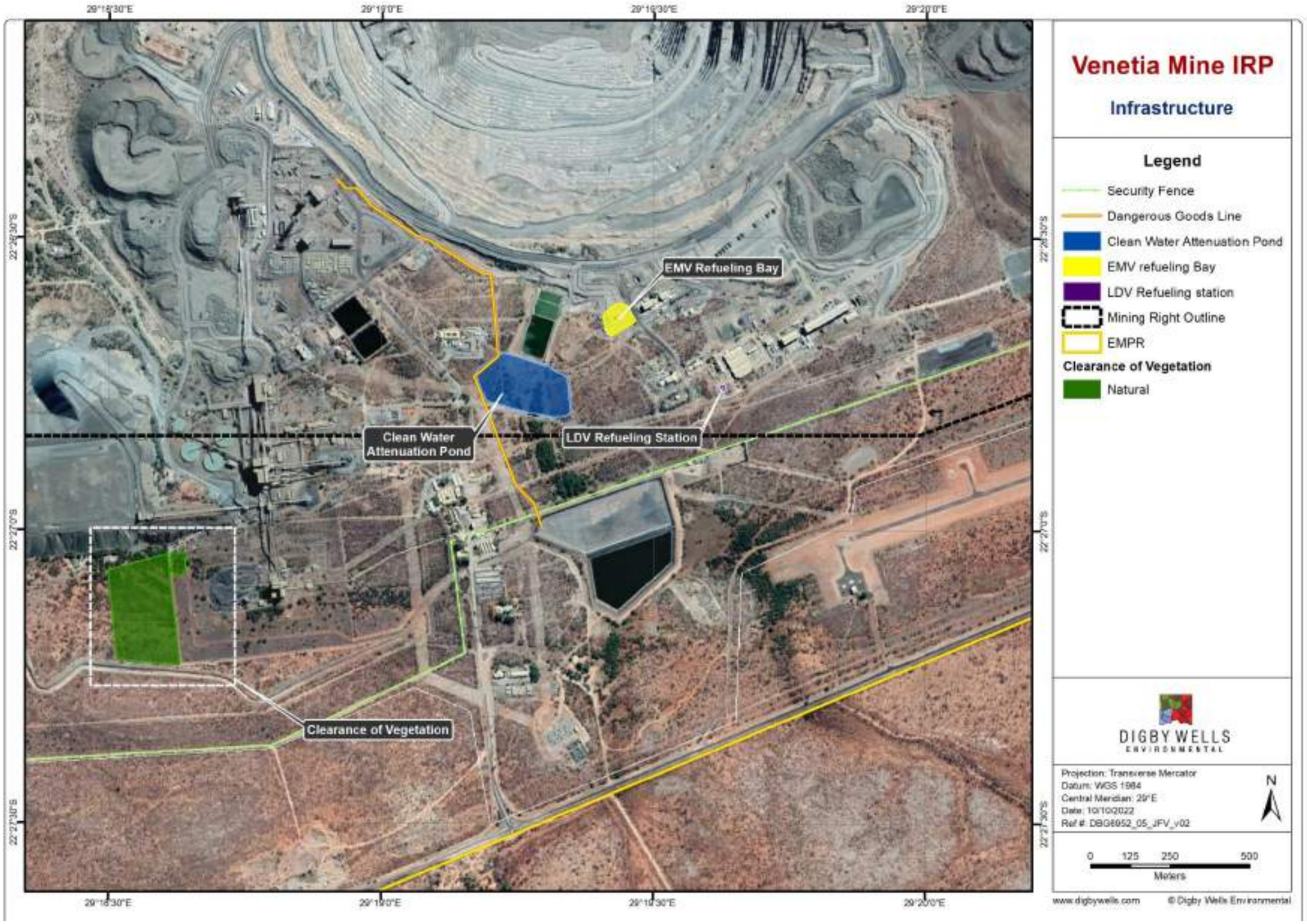

Figure 3-1: Infrastructure Map

4 Description of Impact management objectives including management statements

4.1 Determination of closure objectives

The objective of the Rehabilitation Plan is to ensure activities associated with the infrastructure located within the mining footprint area will be designed to prevent, minimise or mitigate adverse, long-term, environmental and social impacts and create a self-sustaining ecosystem.

4.2 Volumes and rate of water use required for the operation

A 74 000m^3 stormwater attenuation pond will be constructed. No water will be utilised for the proposed activities.

4.3 Has a water use licence has been applied for

A Water Use License has been applied for as a separate and independent process and has been approved.

4.4 Impacts to be mitigated in their respective phases

The proposed mitigation measures and its compliance with the relevant standards are presented in Table 4-1[2].

Table 4-1: Impacts to be Mitigated in their Respective Phases

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
Construction	• Construction of the new infrastructure such as pipelines • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Soil, Land Use, and Land Capability	• Loss of soil resource • Increased risk to soil erosion and sedimentation due to exposed soils and surfaces; • Dust, erosion and sedimentation from stockpiles, dump and discard dump; • Soil contamination and deterioration; and • Soil compaction causing decreased soil depth for root penetration and increased runoff from hardened surfaces.	• Control and prevent. If the destruction of soils with a high land capability is unavoidable, disturbance must be minimised and appropriately rehabilitated in line with defined rehabilitation methodology; • Control and prevent. Topsoil stockpiles must be allocated to specific areas and stockpiled according to site procedures to limit erosion potential and loss; • Remedy. Revegetate disturbed areas in line with site rehabilitation plans, • Control and prevent. Monitor infrastructure, stockpiles and dumps to ensure no runoff, erosion and sedimentation and decreased land capability; • Remedy. If any erosion occurs on site and adjacent of the Project Area, corrective actions (e.g. erosion berms) must be taken to minimise any further erosion from taking place; • Control and minimize. Minimise the period of exposure of soil surfaces through dedicated planning; • Control and prevent. A Storm Water Management Plan (SWMP) should be implemented; and • Control and prevent. Spill containment and clean up kits should be available onsite and clean-up from any spill must be in place and executed at the time of a spillage with appropriate disposal as necessary.	• Chamber of Mines Guidelines • NEMA; and • The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA).	• Life of Construction Phase.
Construction	• Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Fauna and Flora	• Removal of vegetation, basal cover, and thus increasing the potential of loss of topsoil, organic material, and	• Keep site clearing to an absolute minimum by adhering to the Project layout only, and restrict vehicle movement outside of dedicated areas, • Make use of existing roads to encourage minimal impacts/footprint to the Project Area;	• NEMA; • NEM: PAA, as amended; • NFA;	• Construction Phase

[2] The existing EMPr encompasses all required mitigation measures required, however the above mitigation measures have been provided an need to be read in conjunction with the existing mitigations measures that are currently in place.

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
			increased erosion potential. • Removal of potential flora and fauna SCC and faunal habitat; • AIP proliferation; • Increased runoff potential and consequently sedimentation and compaction of the soil; • Potential spillage of hydrocarbons such as oils, fuels (diesel), and grease, thus contamination of the soils and surrounding grounds; • Risk of fire during the dry season; and • Increased dust pollution.	• Whilst the removal of vegetation is underway, key monitoring methods should be focused on the prevention of AIP proliferation during the construction and operational phase. Measures must be in place to prevent the spread of AIPs; • Erosion prevention is key thus runoff must be controlled, and managed by use of proper stormwater management measures; • Management of dust may involve the spraying of water where required; • Vehicles should regularly be surveyed and checked that oils spill and other contaminants are not exposed to the soils; • Storage and re-fueling of vehicles must take place on bunded impervious surfaces or mitigated through the use of drip-trays for field services to prevent seepage of hydrocarbons into the soil; • Fuel, grease, and oil spills should be remediated using a commercially available emergency clean up kits. However, for major spills (>5L), if soils are contaminated, they must be stripped, and disposed of at a licensed waste disposal site; and risk assessment processes to include controls to prevent and recover from fires (e.g. emergency response plans) •	• MPNCA; and National Environmental Biodiversity Act (NEMBA),2004 (Act 10 of 2004).	
Construction	• Expansion of Waste Rock Dump • Construction of clean water attenuation pond; • Pipelines	• Aquatics	• Siltation of water resources due to increased turbidity from dust and soil erosion; and • Water contamination due to leaks or spills of hazardous and hydrocarbon containing material	• Clearing of vegetation must be limited to the development footprint, and the use of any existing access roads must be prioritised to minimise creation of new ones; • Compliance to the site's Atmospheric Emissions License requirements (existing) and Air Quality Management Plan; • Hydrocarbon and hazardous waste storage facilities must be appropriately bunded to ensure that leakages can be contained. Spill kits should be in place and construction workers should be trained in the use of spill kits, to contain and immediately clean up any potential leakages or spills; • Vehicles should regularly be maintained as per the developed maintenance program. This should also	• NWA; • NEM:BA; • NEMA; and • National Freshwater Ecosystems Priority Areas (NFEPA, Nel et al., 2011).	• During the construction and operational phase

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
				be inspected daily before use to ensure there are no leakages underneath; • Drip trays must be used to capture any oil leakages. Servicing of vehicles and machinery should be undertaken at designated hard park areas. Any used oil should be disposed of by accredited contractors; and • Implementation of the proposed stormwater management plan including installation of drains, berms and storage structures.		
Construction	• Expansion of Waste Rock Dump • Construction of clean water attenuation pond • Pipeliens	• Hydropedology	• Disruption of flow paths due to excavations and general land preparation • Sedimentation and siltation of watercourses • Water and soil quality degradation due to the use of hydrocarbons and other waste products.	• Excavations should be limited to the development footprint to minimise disruption of flow paths; • Rehabilitate the land to the most suitable post-mining land use; • Clearing of vegetation must be limited to the development footprint, and the use of any existing access roads must be prioritised to minimise creation of new ones; • Hydrocarbon and hazardous waste storage facilities must be appropriately bunded to ensure that leakages can be contained. Spill kits should be in place and construction workers should be trained in the use of spill kits, to contain and immediately clean up any leakages or spills; • Vehicles should regularly be maintained as per the developed maintenance program. This should also be inspected daily before use to ensure there are no leakages underneath; and • Drip trays must be used to capture any oil leakages. Servicing of vehicles and machinery should be undertaken at designated hard park areas. Any used oil should be disposed of by accredited contractors.	• NEMA; and • NWA.	• During the construction phase
Construction	• Vegetation clearing; • Construction of infrastructure; and • Loading and transportation of materials including topsoil and discard to designated dumps and stockpile areas.	• Surface water	• Sedimentation and siltation of water sources due to increased soil erosion.	• Strategically clear all vegetation within the development site and stockpile topsoils in designated areas as required for rehabilitation; • Encourage the use of existing access roads and minimise creating new ones as to limit soil disturbances; • Avoid stockpiling close to the drainage lines and stockpiling profile should minimise erosion; and	• NEM: BA; • NEMA; and • National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)	• During the Construction Phase

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
				• Maintain vehicles and machinery regularly to avoid leakages.	(NEM: PAA) as amended; • NFA; and • CARA	
Construction	• Site clearing; • Construction of the surface infrastructure.	• Groundwater	• Reduction of groundwater quality	• Restrict areas that must be cleared of vegetation for construction activities to those absolutely necessary; • Avoid constructing below the water table as far as possible; • Apply a liner underneath the attenuation pond to minimise or avoid infiltration; • Implementation of adequate storm water management to contain all waste water and/or volatile organic compounds, for treatment and recycling.	• NEM: BA; • NEMA; and • National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEM: PAA) as amended; • NFA; and • CARA	• During the Construction Phase
Construction	• Removal of vegetation / topsoil; • Construction of surface infrastructure.	• Air Quality	• Poor air quality due to the generation of dust	• Implement localised / activity-specific surface watering where possible to minimise emissions; • Apply dust suppressants on exposed surface areas and the haul roads, where practicable; • Limit high dust-generating activities (i.e. land clearing) to periods of low wind where possible (wind speed less than 5.4 m/s); • Set maximum speed limits on site and have these limits enforced; • Minimise the footprint of disturbance as far as practicable	• NEMA; • National Environmental Management: Air Quality Act, Act.39 of 2004, 2004; and • National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), National Dust Control Regulations (2013).	• On commencement of the Construction Phase and for the duration of the phase
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Noise	• Noise emission	• Construction activities should be restricted to daylight hours; • Machinery and construction vehicles to be serviced as per their design requirements to ensure noise suppression mechanisms are effective e.g. installed exhaust mufflers; and	• Mitigation measures will assist in keeping noise levels as low as possible to comply with the	• During Construction Phase.

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
				• Regulate vehicle speeds on the main, access and haul roads.	National Noise Control Regulations.	
Construction	• All construction activities	• Heritage	• Damage to or destruction of previously unidentified heritage resources.	• Chance find protocol to be followed.	• Commonwealth War Graves Act, 1992 (Act No. 8 of 1992) (CWGA); • Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996); • National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA); and • NHRA Regulations, 2000 (GN R 548).	• During the construction phase of the project
Construction	• All project related activities associated with construction and operation	• Socio-economic	• Community unrest due to a perceived lack of economic opportunities and unmet expectations	• Manage in line with existing stakeholder management processes as per the Anglo American Social Way and mechanisms such as the site's grievance register • Encourage stakeholders to utilise the grievance procedure to communicate their issues and ensure a timeous response to all lodged complaints and grievances.		• Pre-construction and construction
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Fauna and Flora	• Increased vehicle movement in the area, Increasing the risk of faunal casualties due to road kill; • Increased risk of AIP proliferation without adequate control measures; • Increased dust pollution;	• Make use of existing roads to encourage minimal impacts/footprint to the Project Area; • Monitor AIPs and ensure measures are in place to prevent spread and proliferation; • Management of dust may involve the spraying of water where practical; • Monitoring must be carried out during the operational phase to ensure no unnecessary impact to the remaining vegetation and associated habitats	• NEMA; • NEM:BA; and • CITES.	• Life of Operational Phase

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
			• Increase risk of fire during dry season; • Increased erosion, runoff and compaction of soil and consequently sedimentation potential; • Potential spillage of hydrocarbons such as oils, fuels, and grease, thus contamination of the soils and surrounding grounds.	• Follow existing procedures for management of fauna and flora as per the mine's Environmental Management System • Hydrocarbons should be used in an environmentally safe manner with correct storage as per each chemical's specific storage descriptions; and • Re-fueling of vehicles and machinery must take place on a sealed surface area away from wetlands to prevent the ingress of hydrocarbons in the surrounding area.		
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Aquatics	• Siltation of water resources due to increased turbidity from dust and soil erosion; and • Water contamination due to leaks or spills of hazardous and hydrocarbon containing material.	• Clearing of vegetation must be limited to the development footprint, and the use of any existing access roads must be prioritised to minimise creation of new ones; • Hydrocarbon and hazardous waste storage facilities must be appropriately bunded to ensure that leakages can be contained. Spill kits should be in place and construction workers should be trained in the use of spill kits, to contain and immediately clean up any potential leakages or spills; • Vehicles should regularly be maintained as per the developed maintenance program. This should also be inspected daily before use to ensure there are no leakages underneath; • Drip trays must be used to capture any oil leakages. Servicing of vehicles and machinery should be undertaken at designated hard park areas. Any used oil should be disposed of by accredited contractors..	• NWA; • NEM:BA; • NEMA; and • NFEPA, Nel et al., 2011).	• During the construction and operational phase
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Hydropedology	• Deterioration of water quality as a result of handling hazardous waste material including hydrocarbons.	• Management of hydrocarbons (fuels, oils and grease) general and other forms of waste should involve use of clearly marked skip bins and disposal by approved contractors to licensed disposal sites; • Hydrocarbon and chemical storage areas and facilities must be located on a surface that is impermeable, roofed and bunded as required. This will prevent mobilisation of leaked hazardous substances;	• NEMA; and • NWA	• During Operational Phase

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
				• Overall housekeeping and storm water system management must be implemented throughout the LoM; • Training of mine personnel and contractors in proper hydrocarbon and chemical waste handling procedures is recommended; and • Vehicles must only be serviced within designated service bays.		
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Surface water	• Hydrocarbon contamination of water resources.	• Storage facilities for hydrocarbon fuels, oils and grease must be equipped to contain leakages and spills and must be on impermeable surface; • All mining personnel must be trained and educated on proper handling and disposal of hazardous material; • Water quality monitoring should be effectively implemented to ensure adherence to the stipulated water quality standards, and through this, any water quality problems arising because of the reclamation activities can be detected and dealt with early; • Recycling and reusing of water (for the reclamation) is highly recommended.	• NEMA; • NEM:WA; and • NWA	• During the Operational Phase
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Air Quality	• Poor air quality due to the generation of dust	• Follow the requirements of the site's Atmospheric Emissions License and Air Quality Management Plan. Implement localised / activity-specific surface watering to minimise emissions where possible; • Apply dust suppressants on access and haul roads, where practicable; • Set maximum speed limits on site and have these limits enforced; • Minimise the footprint of disturbance as far as practicable; •	• NEM: AQA and • National Ambient Air Quality Standards	• Measurements must commence before the start of the operation phase and for the LoM.
Decommissioning	• Removal, decommissioning and rehabilitation of surface infrastructure such as pipelines.	• Soil, Land Use, and Land Capability	• Negative impacts: • Increased risk to soil erosion and sedimentation due to	• Control, prevent and remediate. Rehabilitation and decommissioning as per approved plans	• Chamber of Mines Guidelines; • NEMA; and	• Life of Rehabilitation Phase

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
Decommissioning	• Removal, decommissioning and rehabilitation plant infrastructure.	• Soil, Land Use, and Land Capability	exposed soils and surfaces; • Soil contamination and deterioration, decreasing the soil fertility; • Increased AIPs due to soil disturbances, decreasing the land capability and soil potential; and • If required, source topsoil from other areas for rehabilitation purposes, impacting other areas. • Positive impacts: • Soil remediation and rehabilitation, increasing the soil potential, fertility and basal cover; • Removal of AIPs and increased soil and land potential; • Removal and disposal of potential impacted soils/tailings; and • Increased soil, land use and land capability of the entire area.	• Remediate. Actively landscape and re-vegetate disturbed areas as soon as possible to avoid loss of soil, organic material, and sedimentation; • Control, prevent and remediate. Implement and maintain a AIPs Management Plan for the duration of the rehabilitation phase and into closure; • Control, prevent and remediate. Rehabilitation must be done as soon as any impacts are observed; • Control, prevent and remediate in line with the mine's approved rehabilitation and closure plan; • Control, prevent and remediate. • Control, prevent and remediate as per approved rehabilitation and closure plan • Control, prevent and remediate. Continue with Concurrent Rehabilitation, and implement land rehabilitation measures; • Remediate in line with criteria defined in the mine's rehabilitation and closure plan	• CARA.	
Decommissioning	• General rehabilitation of the surrounding area.	• Soil, Land Use, and Land Capability				
Decommissioning	• Removal, decommissioning and rehabilitation of surface infrastructures such as pipelines and footprints. • General rehabilitation of the surrounding area.	• Fauna and Flora	• Increased vehicle movement in the area, Increasing the risk of faunal casualties due to roadkill; • Increased risk of AIP proliferation without adequate control measures; • Increased erosion, runoff and compaction	• Rehabilitate in line with the closure criteria specified in the mine's approved Rehabilitation and Closure Plan Ensure a AIP control and eradication programme is implemented for the entirety of this phase; • Ensure designated access routes and roads are used to reduce any unnecessary compaction and degradation; • Inventory of hazardous waste materials stored on-site should be compiled, and complete removal must be arranged; and	• NEM: BA; • NEMA • NEM: PAA (as amended); and • CARA.	• Decommissioning Phase

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
			• of soil and consequently sedimentation potential; • Potential spillage of hydrocarbons such as oils, fuels, and grease, thus contamination of the soils and surrounding grounds.	• Rehabilitation and Monitoring Plan should be implemented.		
Decommissioning	• Demolition and removal of infrastructure; • Rehabilitation and closure.	• Aquatics	• Erosion and sedimentation •	• Where required, clearing of vegetation should be limited to the decommissioning footprint area and revegetated according to criteria specified in the mine's rehabilitation and closure plan ; • Use of accredited contractors for removal or demolition of infrastructure during decommissioning is recommended; this will reduce the risk of waste generation and accidental spillages; • Ensure that the infrastructure (pipelines, fuel storage areas) are first emptied of all residual material before decommissioning.	• NWA; • NEM:BA; and • NEMA;	• During the decommissioning phase • and post-decommissioning phase
Decommissioning	• Decommissioning and Closure	• Hydropedology	• Contamination of receiving soils and waterbodies.	• Rehabilitate in line with the criteria specified in the Rehabilitation and Closure Plan • All leaks and spillages should be cleaned as soon as possible and disposed of by accredited vendors; • Use of accredited contractors for removal or demolition of infrastructure is recommended; this will reduce the risk of waste generation and accidental spillages.	• NEMA; and • NWA	• During Decommissioning Phase
Decommissioning	• Decommissioning and removal of mine infrastructure will result in the disturbance of soils thereby accelerating soil erosion; • Handling hydrocarbon material and potential leakage and spillage from moving vehicles and machinery; and •	• Surface water	• Sedimentation and siltation of watercourses subsequently affecting water quality and flow of streams; • Contamination of water resources due to chemical contamination such as hydrocarbons as result of mishandling.	• Soil disturbances during decommissioning should be restricted to the relevant footprint area; • All decommissioning debris must be cleared as soon as practically possible •	• NEMA; • NEM:WA; • NWA.	• During the Decommissioning Phase

Phase	Project Activity	Aspect	Impacts	Mitigation Measures	Compliance with standards	Time frame for implementation
Decommissioning	• Dismantling and removal of infrastructure • Rehabilitation of the Project area • Post-closure monitoring and rehabilitation	• Air Quality	• Poor air quality due to the generation of dust	• Set maximum speed limits on dirt roads and have these limits enforced; • The area of disturbance must be kept to a minimum at all times and no unnecessary clearing, digging or scraping must occur, especially on windy days; • Rehabilitation of disturbed land to allow for vegetation growth.	• NEM: AQA and • National Ambient Air Quality Standards.	• On commencement of the decommissioning phase and for the duration of the phase
Decommissioning	• Removal, decommissioning and rehabilitation of surface infrastructure such as pipelines and footprints. • General rehabilitation of the surrounding area.	• Noise	• Noise emission	• Restrict decommissioning activities to daylight hours; • Regularly service machines and vehicles to ensure noise suppression mechanisms are effective e.g., installed exhaust mufflers; • Regulate speed limits on access roads; and • Switch off equipment when not in use.	• SANS 10103	• Decommissioning and Rehabilitation Phase

5 Impact Management Outcomes

Table 5-1 explains the measures to rehabilitate the environment affected by the undertaking of any listed activity[3].

Table 5-1: Impacts to be Mitigated in their Respective Phases

Phase	Project Activity	Aspect	Impacts	Mitigation Type	Standards to be Achieved
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Soil, Land Use, and Land Capability	• Loss of soil resource; • Increased risk to soil erosion and sedimentation due to exposed soils and surfaces; • Dust, erosion and sedimentation from stockpiles, dump and discard dump; • Soil contamination and deterioration; and • Soil compaction causing decreased soil depth for root penetration and increased runoff from hardened surfaces.	• Concurrent rehabilitation through the life of mine	• Soil Management in terms of the Chamber of Mines Guidelines for Rehabilitation; and • To prevent the loss of topsoil as a resource.

[3] The existing EMPr encompasses all required mitigation measures required, however the above mitigation measures have been provided an need to be read in conjunction with the existing mitigations measures that are currently in place.

Phase	Project Activity	Aspect	Impacts	Mitigation Type	Standards to be Achieved
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Fauna and Flora	• Removal of vegetation, basal cover, and thus increasing the potential of loss of topsoil, organic material, and increased erosion potential. • AIP proliferation; • Increased runoff potential and consequently sedimentation and compaction of the soil; • Potential spillage of hydrocarbons such as oils, fuels (diesel), and grease, thus contamination of the soils and surrounding grounds; • Risk of fire during the dry season; and • Increased dust pollution.	• Modify, remedy, control, or stop concurrent rehabilitation through the life of remining operations	• To minimise disturbance of natural habitats
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Aquatics	• Siltation of water resources due to increased turbidity from dust and soil erosion; and • Water contamination due to leaks or spills of hazardous and hydrocarbon containing material	• Modify through construction site planning; and • Control through stormwater management and sediment containment infrastructure.	• To prevent unnecessary impacts on aquatic ecology.
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Hydropedology	• Sedimentation and siltation of watercourses • Water and soil quality degradation due to the use of hydrocarbons and other waste products.	• Control the impacts by implementation of proposed mitigation measures during the construction phase	• To prevent unnecessary impacts on hydropedology.
Construction	• Vegetation clearing; • Construction of infrastructure; and • Loading and transportation of materials including topsoil and discard to designated dumps and stockpile areas.	• Surface water	• Sedimentation and siltation of water sources due to increased soil erosion.	• Control by implementing proposed stormwater management plan to minimise impacts on the environment.	• To prevent unnecessary impacts on surface water resources.
Construction	• Site clearing • Expansion of Waste Rock Dump	• Groundwater	• Reduction of groundwater quality	• Control by minimising disturbed area. • Maximizing the re-use of contaminated water where possible	• To prevent unnecessary impacts on groundwater.

Phase	Project Activity	Aspect	Impacts	Mitigation Type	Standards to be Achieved
	• Construction of clean water attenuation pond				
Construction	• Removal of vegetation / topsoil; • Construction of surface infrastructure.	• Air Quality	• Poor air quality due to the generation of dust	• Ambient air quality monitoring; and • Control through the implementation of an air quality management plan.	• To prevent air pollution.
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Noise	• Noise emission	• Noise control measures and Noise monitoring.	• To comply with the definition of 'noise disturbance' as described by the National Noise Control Regulations.
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Heritage	• Damage to or destruction of Historical Landfill	• Avoid • Control	• To prevent any disturbance to heritage features that may be uncovered.
Construction	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond • All other related construction activities	• Heritage	• Damage to or destruction of previously unidentified heritage resources.	• Control	• To prevent any disturbance to heritage features that may be uncovered.
Construction	• All project related activities associated with construction and operation	• Socio-economic	• Community unrest due to a perceived lack of economic opportunities and unmet expectations	• Stakeholder engagement plan needs to be drafted and this factor needs to be taken into consideration.	•
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Fauna and Flora	• Increased vehicle movement in the area, Increasing the risk of faunal casualties due to road kill; • Increased risk of AIP proliferation without adequate control measures; • Increased dust pollution; • Increase risk of fire during dry season; • Increased erosion, runoff and compaction of soil and	• Modify, remedy, control, or stop concurrent rehabilitation through the life of remining operations	• To minimise disturbance of natural habitats; and • To prevent the establishment and manage alien invasive vegetation according to the NEM: BA.

Phase	Project Activity	Aspect	Impacts	Mitigation Type	Standards to be Achieved
			consequently sedimentation potential; • Potential spillage of hydrocarbons such as oils, fuels, and grease, thus contamination of the soils and surrounding grounds.		
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Aquatics	• Siltation of water resources due to increased turbidity from dust and soil erosion; and • Water contamination due to leaks or spills of hazardous and hydrocarbon containing material.	• Control through Implementation of the proposed stormwater management plan	• To prevent unnecessary impacts on aquatic ecology.
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Surface water	• Hydrocarbon contamination of water resources.	• Regular maintenance of SWMP to ensure effective functioning of storm water structures.	• To prevent unnecessary impacts on surface water resources.
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Air Quality	• Poor air quality due to the generation of dust	• Ambient air quality monitoring; and • Control through the implementation of an air quality management plan.	• To prevent air pollution.
Operational	• Site clearing • Expansion of Waste Rock Dump • Construction of clean water attenuation pond	• Noise	• Noise emissions	• Noise control measures; and • Noise monitoring.	• To comply with the definition of ‘noise disturbance’ as described by the National Noise Control Regulations.
Decommissioning	• Removal, decommissioning and rehabilitation of surface infrastructure such as pipelines.	• Soil, Land Use, and Land Capability	• Negative impacts: • Increased risk to soil erosion and sedimentation due to exposed soils and surfaces; • Soil contamination and deterioration, decreasing the soil fertility; • Increased AIPs due to soil disturbances, decreasing the	• Concurrent rehabilitation through the life of mine and after mine through the execution of the mine’s rehabilitation and closure plan	• Soil Management in terms of the Chamber of Mines Guidelines for Rehabilitation.
Decommissioning	• Removal, decommissioning and rehabilitation of plant infrastructure.	• Soil, Land Use, and Land Capability			
Decommissioning	• General rehabilitation of the surrounding area, including wetland rehabilitation.	• Soil, Land Use, and Land Capability			

Phase	Project Activity	Aspect	Impacts	Mitigation Type	Standards to be Achieved
			land capability and soil potential; and • Source topsoil from other areas for rehabilitation purposes, impacting other areas. • Positive impacts: • Soil remediation and rehabilitation, increasing the soil potential, fertility and basal cover; • Removal of AIPs and increased soil and land potential; • Removal and disposal of potential impacted soils/tailings; and • Increased soil, land use and land capability of the entire area.		
Decommissioning	• Removal, decommissioning and rehabilitation of surface infrastructures such as pipelines. • Removal, decommissioning and rehabilitation of plant infrastructure. • General rehabilitation of the surrounding area.	• Fauna and Flora	• Increased vehicle movement in the area, Increasing the risk of faunal casualties due to roadkill; • Increased risk of AIP proliferation without adequate control measures; • Increased erosion, runoff and compaction of soil and consequently sedimentation potential; • Potential spillage of hydrocarbons such as oils, fuels, and grease, thus contamination of the soils and surrounding grounds.	• Modify, remedy, control, or stop concurrent rehabilitation through the life of remining operations	• To minimise disturbance of natural habitats.
Decommissioning	• Demolition and removal of infrastructure; • Rehabilitation and closure.	• Aquatics	• Erosion and sedimentation •	• Storm water management: Control contamination of receiving waterbodies by consideration of potential contamination sources and strategic decommissioning to minimize on potential environmental impacts	• To prevent unnecessary impacts on aquatic ecology.

Phase	Project Activity	Aspect	Impacts	Mitigation Type	Standards to be Achieved
Decommissioning	• Decommissioning and Closure	• Hydropedology	• Contamination of receiving soils and waterbodies; and • Improvement of water quality and surface drainage following reprofiling of rehabilitated landscapes	• Remedy through rehabilitation where necessary.	• To prevent unnecessary impacts on hydropedology.
Decommissioning	• Decommissioning and removal of mine infrastructure will result in the disturbance of soils thereby accelerating soil erosion; • Handling hydrocarbon material and potential leakage and spillage from moving vehicles and machinery; and •	• Surface water	• Sedimentation and siltation of watercourses subsequently affecting water quality and flow of streams; • Contamination of water resources due to chemical contamination such as hydrocarbons as result of mishandling.	• Monitoring of water quality and quantity post-closure; and • Rehabilitation of disturbed landscapes monitoring and maintenance of rehabilitated areas until vegetation has fully been established.	• To prevent unnecessary impacts on surface water resources.
Decommissioning	• Dismantling and removal of infrastructure • Rehabilitation of the Project area • Post-closure monitoring and rehabilitation	• Air Quality	• Poor air quality due to the generation of dust	• Ambient air quality monitoring • Control through the implementation of an air quality management plan	• To prevent Air Pollution.
• Decommissioning	• Removal, decommissioning and rehabilitation of surface infrastructure • General rehabilitation of the surrounding area.	• Noise	• Noise emission	• Noise control measures; and • Noise monitoring.	• To comply with the definition of ‘noise disturbance’ as described by the National Noise Control Regulations.

•

6 Financial Provision

To complete the Financial Provision Assessment there are several tasks which were undertaken. These tasks are discussed below.

6.1 Determination of the amount of Financial Provision

6.1.1 Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation

The closure objectives will be to rehabilitate disturbed area to a land use that conforms to the generally accepted principle of sustainable development through restoration, remediation, rehabilitation and stabilisation.

The objective of the Rehabilitation Plan is to ensure activities associated with the infrastructure located within the mining footprint area will be designed to prevent, minimise or mitigate adverse, long-term, environmental and social impacts and create a self-sustaining ecosystem.

6.1.2 Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties

This draft document will be distributed for public comment.

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

A Site Wide Closure and Rehabilitation Plan has been compiled and included as an Appendix to this draft Report.

6.1.4 Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives

A Rehabilitation Plan has been compiled for the proposed Project area in line with legislated requirements.

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

The quantum was calculated to be R864,345,625.66 (based on 2021 closure liability update and year-one costs of stormwater management project provisioned upfront). It must be noted that this quantum is adjusted annually in line with the annual Basis of Estimate Report. Any new infrastructure will be assessed with the provision to be adjusted accordingly.

6.1.6 Confirm that the financial provision will be provided as determined

Provided that the EA is approved, De Beers will provide for closure as per the legal requirements. A liability assessment will also need to be undertaken annually to ensure the financial provision is in line with the closure cost.

7 Monitoring compliance with and performance assessment

De Beers will be responsible for the implementation of all monitoring of mitigation and management measures, as well as compliance with the EMP. The Applicant will keep a record of all environmental monitoring taken on site.

7.1 Monitoring of impact management actions

A monitoring programme is essential as a management tool to detect negative impacts as they arise and to ensure that the necessary mitigation measures are implemented. Venetia Mine is an existing facility with regular monitoring of environmental impacts. It is recommended that the current monitoring be extended to the proposed project.

7.2 Monitoring and reporting frequency

Monitoring and reporting frequency will occur as per the status quo.

7.3 Responsible persons

De Beers will be responsible for the monitoring and reporting on site.

7.4 Time period for implementing impact management actions

The time period for implementing impact management actions has been provided in Table 4-1 and Table 5-1.

7.5 Mechanism for monitoring compliance

Table 4-1 and Table 5-1. sets out the monitoring and management programme of environmental impacts for the proposed project.

8 Indicate the frequency of the submission of the performance assessment/ environmental audit report

In accordance with the EIA Regulations (2014), as amended, an external independent Environmental Audit will be undertaken every year. The Environmental Audit Report will be submitted to the DMRE and other relevant authorities where required.

9 Environmental Awareness Plan

9.1 Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work

Section 39 of the MPRDA requires Mining to develop an environmental awareness plan to inform the employees of any environmental risks which may result from their work. Therefore, the objectives of the environmental awareness plan will be:

- To educate employees regarding their role in conserving the environment and the importance of conserving natural resources,
- To identify environmental training needs for employees and contractors at all levels,
- To ensure that employees whose work could cause significant environmental impact as identified by the mine are competent to perform those tasks to which they are assigned,
- To enable employees to identify environmental impacts or non-conformances of their work activities on the environment,
- To familiarise employees with emergency preparedness and response requirements,
- To be aware of the potential consequences of deviation from specified operating procedures, and
- To conduct their work and manage mining activities in an environmentally responsible manner.

9.2 Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment

Management shall establish and maintain procedures for the internal communication between the various levels and functions of the organisation, and receiving, documenting and responding to relevant communication from external I&APs. The organisation shall consider processes for external communication on its significant environmental aspects and record its decisions. Communication is a management responsibility. All line supervisors are responsible for effective communication within their own sections. Methods for the internal communication between the various levels and functions of the organisation, and receiving, documenting and responding to relevant communication from I&APs must be established for the Project. Environmental risks will be dealt.

10 Specific information required by the Competent Authority

The financial provision for the environmental rehabilitation and closure requirements of mining operations is governed by NEMA, as amended, which provides in Section 24P that the holder

of a mining right must make financial provision for rehabilitation of negative environmental impacts. The financial provision will continue to be reviewed annually.

11 Undertaking

The EAP herewith confirms:-

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

Signature of the Environmental Assessment Practitioner:	Mia Smith
Name of Company:	Digby Wells Environmental
Date:	20/10/22