De Beers Consolidated Mine (Pty) Ltd: Venetia Mine

Storm Water Management Project

Scoping Report

Report date: 29 June 2021
Application Reference: TO INCLUDE ON RECEIPT
DMRE Reference: LP30/5/1/2/3/2/1/58/EM.

SHANGONI
Management Services (Pty) Ltd

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Executive summary

De Beers Consolidated Mine (Pty) Ltd. ("DBCM"): Venetia Mine is located on the farm Venetia 130 MS, approximately 80 km to the west of the town of Musina, within the Musina Local Municipality of the Vhembe District Municipality in Limpopo Province. Venetia Mine is an existing opencast diamond mine and commenced with operation in 1992. The extent of the Mining Right boundary is approximately 3 000 ha and includes three main kimberlite ore reserves, namely K1, K2 and K3 kimberlite pipes.

As the depth of open pit mining increases, the amount of waste rock increases and opencast mining becomes economically and environmentally unviable. Accordingly, the opencast pit will be developed to a depth of approximately 450 m, whereafter, the K1 and K2 reserves will be mined from underground as part of the Venetia Underground Project ("VUP") in accordance with the following approvals:

- *Environmental Management Programme for Proposed Underground Operations and EMP Consolidation for Existing Operations at De Beers Consolidated Mines, Venetia Mine, Limpopo Province*, dated 2012 and prepared by Environmental Resources Management, DMRE reference number: LP30/5/1/2/3/2/1/58/EM.
- *Environmental Authorisation*, dated 2012. DMRE reference number: LP30/5/1/2/3/2/1/58/EM.
- *Environmental Authorisation*, dated 2012. Limpopo Department of Economic Development, Environment and Tourism ("LEDET") Reference number: 12/1/9/2-V9.
- *Amended Environmental Authorisation*, 2015. LEDET. Reference register number: 12/1/9/2-V9.
- *Water Use Licence No 14/A63E/ABCGIJ/5111*. File No: 27/2/2/A563/1/1. 7 August 2017. Department of Water and Sanitation.
- *Amended Waste Management Licence for Venetia Mine within Musina Local Municipality*, approved 26 February 2018 with LEDET reference number: 12/4/10/8-A/9/V1/A1.
- *Atmospheric Emissions Licence (AEL): De Beers Consolidated Mines (Pty) Ltd within Musina Local Municipality* approved 31 March 2017 with licence number: 12/4/12L-V7.

Venetia Mine has identified the need to construct additional storm water management infrastructure and water containment facilities with the purpose of de-risking the above mentioned VUP from flooding (to ensure the safety of people working in the newly developed underground mine), to ensure legal compliance to the requirements of the GN.R 704 (*Regulations on the use of water for mining and related activities aimed at the protection of water resources*) dated June 1999 as published under the National Water Act, 1998 (Act No.36 of 1998) ("NWA"), to ensure compliance to Section 19 (Duty of care) of the NWA, and to ensure compliance to Section 28 (Duty of care) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"). Venetia Mine commenced with the Storm Water Management Project ("SWMP") conceptual studies in 2011, and applied for the required storm water infrastructure in the 2014 Integrated Water Use Licence ("IWUL") amendment application, as was subsequently approved. Since 2014, various studies have been undertaken, including mine residue waste classifications, geohydrological studies and water balance updates to better inform the detailed designs, capacities and locations of the proposed facilities and proposed expansion with a total required storage capacity of 2.11 Mm^3.

This application is for the NEMA listed activities as will be triggered by the SWMP. A water use licence application will also be submitted to licence additional water uses and changes to the capacities and locations of licensed water-storage facilities.

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References

Department of Environmental Affairs. 2017. *Integrated Environmental Management Guideline: Guideline on Need and Desirability*.

Department of Environmental Affairs. 2014. *National Environmental Management Act, 1998 (Act 107 of 1998). GNR.982 Environmental Impact Assessment (EIA) Regulations, dated December 2014, as amended*.

Department of Environmental Affairs. 2004. *Integrated Environmental Management Information Series. Criteria for determining alternatives in EIA*.

Department of Mineral Resources. *Guideline for Consultation with communities and Interested and Affected Parties*.

1. Details of project applicant and Environmental Assessment Practitioner

1.1. Details of the project applicant

Name of operation	Venetia Mine
Applicant	De Beers Consolidated Mines Limited
Postal address	PO Box 668, Musina,0900
Responsible person	Gavin Anderson
Telephone no.	015 575 2773
e-mail address	Gavin.anderson@debeers.com
Company registration no.	2000/011085/07

1.2. Details of the Environmental Assessment Practitioner

EAP	Shangoni Management Services (Pty) Ltd.: Ashley Miller
Tel No	(012) 807 7036
Fax No	(012) 807 1014
e-mail Address	ashley@shangoni.co.za

1.3. Expertise of the environmental assessment practitioner

Name and Surname	Qualifications and summary of experience
Ashley Miller	Ashley obtained his B.Sc (Honours) degree in Environmental Analysis and Management through the University of Pretoria. Ashley is part of the Environmental Authorisations Department at Shangoni Management Services (Pty) Ltd. and has experience in drafting Basic Assessment Reports, Scoping Reports, Environmental Impact Assessments (EIA), Environmental Management Programme Reports (EMPr), Integrated Water and Waste Management Plans (IWWMP) and Integrated Water Use Licence Applications (IWULA). Ashley is also the Product Lead of Environmental Assurance and has the following experience in auditing: Due diligence audits, External Water Use Licence audits, Environmental Authorisation audits, Environmental Management Programme audits, Waste Management Licence audits and Atmospheric Emissions Licence audits. Ashley has also gained valuable experience in Geographic Information Systems (GIS) in compiling regional, locality and infrastructure maps and mine plans.
Brian Hayes	Brian has for the past 29 years been actively involved in environmental management and engineering primarily in the mining, FMCH and petrochemical industries. A registered professional engineer (Chemical) with a master's degree in environmental engineering, Brian is responsible for quality assurance within the environmental department whilst also actively involved in consulting to clients on aspects and projects related to environmental assurance.

2. Description of the property

Table 1: Description of the properties applicable to the proposed activities (refer also to Figure 1)

Farm name	**Pollution Control Dam ("PCD") 1A:** Portion 2 of the Farm Venetia 103 MS.
	PCD 2: Portion 5 of the Farm Venetia 103 MS.
	PCD 3: Portion 5 of the Farm 103 MS.
	PCD 1 Compartment 4B: Portion 2 of the Farm Venetia 103 MS.
	Fine Residue Deposit ("FRD") 1 Return Water Dam (RWD") expansion: Portion 5 of the Farm Venetia 103 MS.
	On-mine Water Storage Dam ("OMWSD") North and South compartment: Portion 1 of the Farm Venetia 103 MS. Portion 2 of the Farm Venetia 103 MS.
	OMWSD Compartment 3: Portion 2 of the Farm Venetia 103 MS.
	OMWSD Compartment 4: Portion 1 of the Farm Venetia 103 MS.
	K 03 Pit: Portion 0 (RE) of the Farm Venetia 103 MS
	Mine water discharge: Portion 3 of the Farm Venetia 103 MS. Portion 5 of the Farm Venetia 103 MS.
	Pipelines, pumping systems, storm water management channels and trenches: Portion 0 (RE) of the Farm Venetia 103 MS. Portion 1 of the Farm Venetia 103 MS. Portion 2 of the Farm Venetia 103 MS. Portion 3 of the Farm Venetia 103 MS. Portion 4 of the Farm Venetia 103 MS. Portion 5 of the Farm Venetia 103 MS.
	Relocation of the mine boundary security fence, upgrading of southern access road and re-routing of an 11 kV and a 22 kV powerline: Portion 3 of the Farm Venetia 103 MS. Portion 4 of the Farm Venetia 103 MS. Portion 5 of the Farm Venetia 103 MS.
Magisterial district	Musina Local Municipality, Vhembe District Municipality

Distance and direction from nearest town	80 km west of Musina (refer also to Figure 2).
21-digit Surveyor General Code	T0MS00000000010300000 T0MS00000000010300001 T0MS00000000010300002 T0MS00000000010300003 T0MS00000000010300004 T0MS00000000010300005

3. Locality of the project

Venetia Mine falls within the administrative boundaries presented in Table 2.

Table 2: Administrative boundaries

Province	Limpopo Province
District municipality	Vhembe District Municipality
Local municipality	Musina Local Municipality
Department of Mineral and Energy ("DMRE") Local Office and the Competent Authority ("CA")	DMRE (Polokwane)
Department of Water and Sanitation ("DWS") Local Office	DWS (Polokwane)
The Limpopo Department of Economic Development Environment and Tourism ("LEDET")	LEDET (Polokwane)
Catchment zone	Limpopo River Catchment
Sub-catchments	A6
Water Management Area ("CMA")	Limpopo Water Management Area
Quaternary catchment	A63E

4. Description of the scope of the proposed activities

The overarching purpose of the Storm Water Management Project ("SWMP") is to ensure legal compliance as per the requirements of GN.R 704, and Section 19 (Duty of care) of the NWA and to ensure the safety of people working in the newly developed underground mine (the VUP). Venetia Mine commenced with the SWMP conceptual studies in 2011, and included the required storm water infrastructure in the 2014 IWUL amendment application, as subsequently approved. Since 2014, various studies have been undertaken, including water balance updates to better inform the detailed designs, capacities and locations of the proposed water containment facilities that will provide the required storage for the SWMP of 2.11 Mm^3. This application supports the principles of the hierarchy of water use specifically focussing on water conservation and improved water security. The proposed

project will also reduce the requirement for the approved and licensed abstraction of fresh water from the Well Fields.

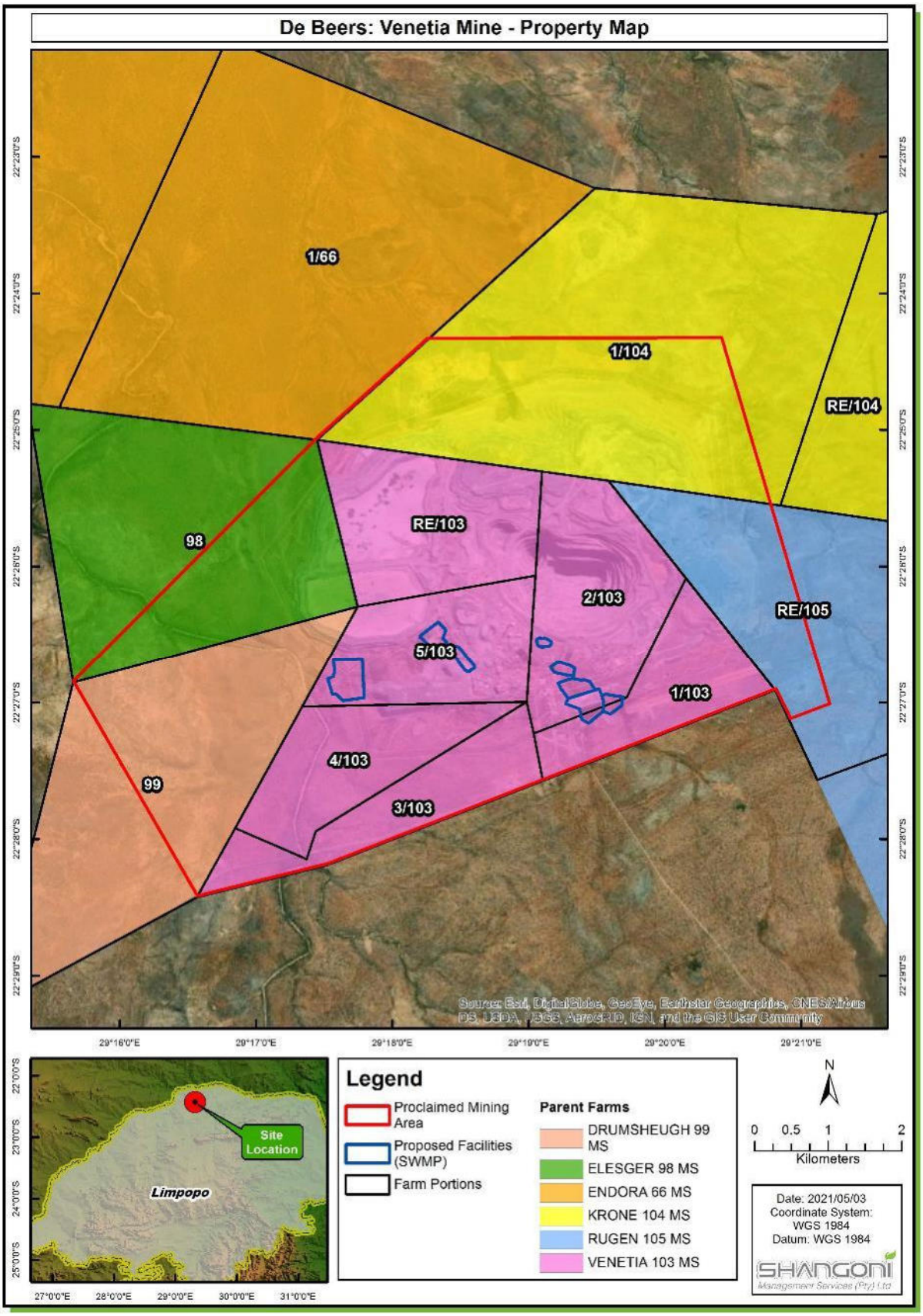

Figure 1: Affected properties associated with the proposed activities.

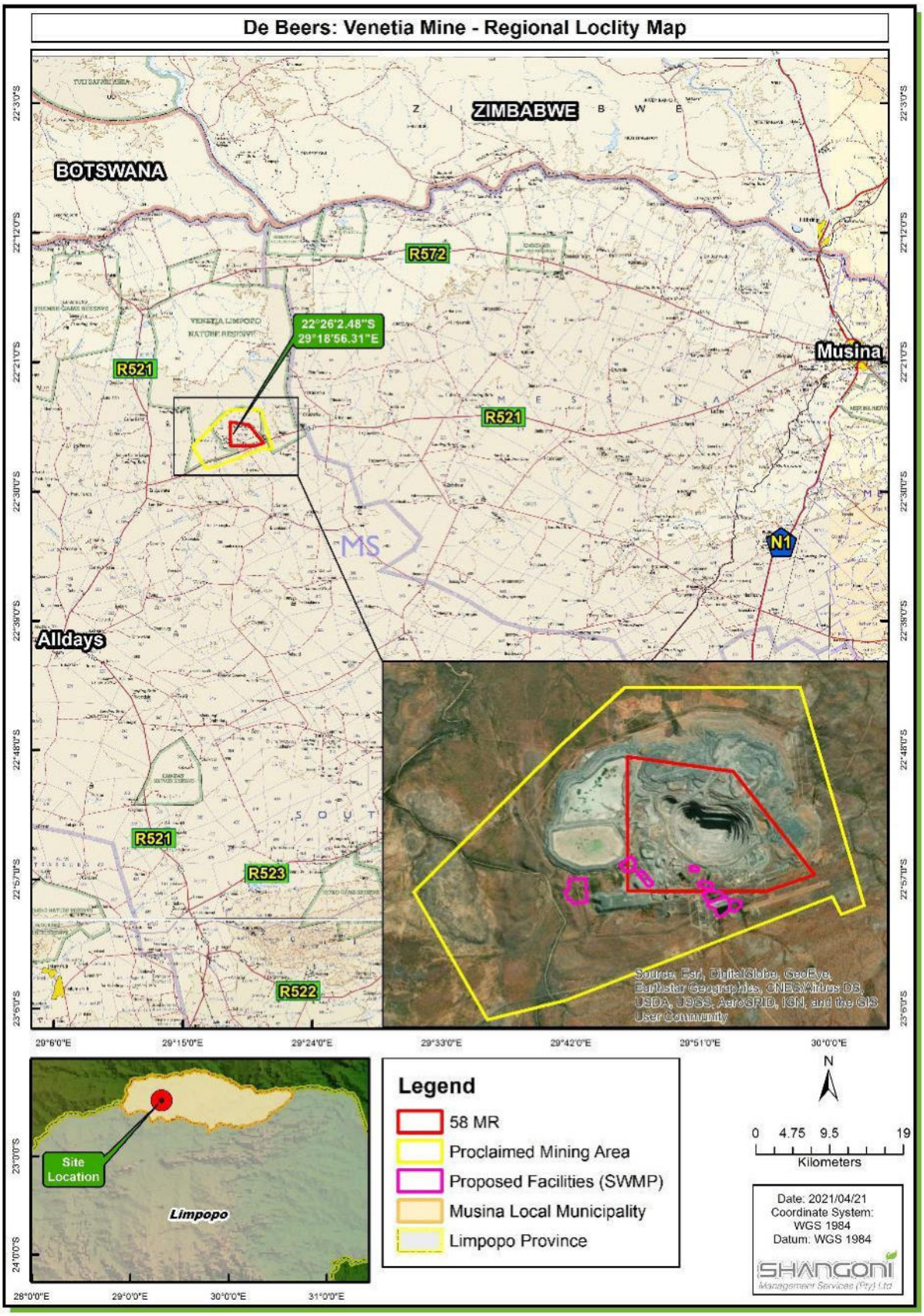

Figure 2: Locality of Venetia Mine

4.1. Description of the proposed activities to be undertaken

The SWMP includes the following proposed facilities:

- Pollution Control Dam ("PCD") 1:
    - PCD 1 will be constructed south of the existing Storm Water Control Dams (Dam 1 and Dam 2) ("SWCD"). This facility will be constructed to contain affected water runoff from the VUP surface area, crusher area, main offices and workshops, and will have a capacity of 120 000 m^3. PCD 1 is approved within the current approved *Environmental Management Programme for Proposed Underground Operations and EMP Consolidation for Existing Operations at De Beers Consolidated Mines, Venetia Mine, Limpopo Province*, dated 2012 and prepared by Environmental Resources Management, DMRE reference number: LP30/5/1/2/3/2/1/58/EM ("approved EMPr") and is licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design and capacity of this facility have occurred since the mentioned approvals. A Water Use Licence ("WUL") application will also be submitted for the proposed activity.
- PCD 2:
    - PCD 2 will be constructed to the north-west of the plant area (south-east of the FRD 1 RWD). This facility will be constructed as a containment facility and will only receive water as removed from the opencast pit, underground operation and other facilities where capacity is required. PCD 2 will have a capacity of 130 000 m^3 and is approved within the current approved EMPr and is licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design, capacity and location of this facility have occurred since the mentioned approvals. A separate WUL application will be submitted for the proposed activity.
- PCD 1 Compartment 4B:
    - PCD 1 Compartment 4B will be constructed as a containment facility and will only receive water as removed from the opencast pit and underground operation. PCD 1 Compartment 4B will have a capacity of 34 000 m^3. PCD 1 Compartment 4B is approved within the current approved EMPr and is licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design and capacity of this facility have occurred since the EMPr approval, but is correct within the IWUL.
- Fine Residue Deposit ("FRD") 1 Return Water Dam (RWD") expansion:
    - FRD 1 RWD is an existing facility, approved within the EMPr and licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111), that will be expanded by raising the dam walls by 3 metres (expansion not included in the current EMPr and IWUL). The facility currently receives water from the FRD 1 penstock and a small portion of the upstream catchment adjacent to the opencast pit. The current capacity of FRD 1 RWD is 40 000 m^3 and will be expanded to a capacity of 130 000 m^3. A separate WUL application will be submitted for the proposed activity.

- On-mine Water Storage Dam ("OMWSD") North and South compartment expansion:
    - The On-mine Water Storage Dam ("OMWSD") North and South Compartments are existing facilities, approved within the EMPr and licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111), whereby the capacity of the facility will be increased by raising the dam walls by 2 metres and increasing the capacity by 190 000 m^3 (expansion not included in the current EMPr and IWUL). This will increase the current combined capacity of 460 000 m^3 to 650 000 m^3. The OMWSD Dams only receive water from the opencast pits, the plant and the Well Fields. A separate WUL application will be submitted for the proposed activity.
- OMWSD Compartment 3:
    - OMWSD Compartment 3 is a new proposed facility that will be constructed north of the OMWSD North Compartment. This facility will be constructed to contain water from opencast pits, the plant, the underground mine and the Well Fields. OMWSD Compartment 3 will have a capacity of 275 000 m^3. This is a new facility it is not included in the current EMPr and IWUL. A separate WUL application will be submitted for the proposed activity.
- OMWSD Compartment 4:
    - OMWSD Compartment 4 is a new proposed facility that will be constructed to the south-east of the OMWSD North and South Compartments and will occupy a portion of the area of the Attenuation Facility (licensed facility). This facility will be constructed to contain water from opencast pits, the plant, the underground mine and the Well Fields. OMWSD Compartment 4 will have a capacity of 185 000 m^3. This is a new facility it is not included in the current EMPr and IWUL. A separate WUL application will be submitted for the proposed activity.
- PCD 3:
    - PCD 3 is the main containment facility proposed for the SWMP and will be the first facility to be constructed to de-risk the VUP and ensure compliance to the requirements of GN.R 704 and to ensure compliance to Section 19 (Duty of care) of the NWA. PCD 3 will be constructed to the west of the mine adjacent to the Course Residue Deposit ("CRD"). This facility will be constructed to contain affected water runoff from the upstream catchments inclusive of runoff from the CRD, FRDs and potential overflow from the other upstream water containment facility. The facility will also be constructed to contain water as removed from the opencast pits and the VUP underground workings. The facility will have a capacity of 1 050 000 m^3. PCD 3 is authorised within the current approved EMPr and is licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design, capacity and required footprint of this facility have occurred since the approvals and such changes will require authorisation. A separate WUL application will be submitted for the proposed activity.
- K03 Pit:
    - K03 Pit is an existing opencast pit. As the ore reserves associated with K03 Pit have been mined out, it is proposed to use K03 Pit as a water containment facility with mine water as

removed from the VUP underground mine pumped to K03 Pit before being pumped to the other facilities for containment and reuse. K03 Pit has the capacity to contain 3.5 Mm^3 of water, however, it is anticipated that a volume of 780 000 m^3 of water removed from underground will be stored within the pit. This proposed activity is not authorised. A separate WUL application will be submitted.

- Mine water discharge:
  - Venetia Mine proposes to discharge surplus water to the receiving environment during extreme rainfall events and only when there is insufficient storage capacity, not only as means of managing surplus water but also to ensure safety in the underground workings of the VUP. Current storm water runoff modelling and water balance assessments indicate that a total volume of 792 000 m^3 may be required to be discharged annually. As indicated, the discharge of affected water will only be conducted should there be insufficient capacity and in accordance with the relevant approvals (Environmental Authorisation and WUL). Should such a discharge occur, the discharge will occur from PCD 3 and / or the OMWSD. A separate WUL application will be submitted for the proposed activity.
- Relocation of the mine boundary security fence, upgrading of southern access road and re-routing of 22 kV powerlines (including sub-stations):
  - Mine security fence - As PCD 3 will extend beyond the current Venetia Mine security fence, it is required to relocate the security fence around the boundary of PCD 3.
  - 22 kV powerline - A 22 kV mine powerline traverses the proposed PCD 3 area that will require relocation to direct the powerline around PCD 3. Sub-stations will also be made available.
  - 22 kV powerline - A 22 kV mine powerline traverses the proposed PCD 1 area that will require relocation to direct the powerline around PCD 1. Sub-stations will also be made available.
  - Southern access road – The southern access road will be upgraded and expanded to a 10 m wide road (currently 4 m wide) to provide access of construction vehicles to the proposed PCD 3 locality.
- Construction storm water management infrastructure including channels and trenches:
  - Storm water management infrastructure, inclusive of channels and trenches will be constructed to divert affected water runoff to the existing and proposed above-mentioned facilities.
  - Venetia Mine proposes to construct a seepage collection trench along the western boundary of FRD 1 and FRD 2 to collect any seepage that may occur from the FRDs and direct such to either the North Seepage Dam, FRD 2 RWD or the Southern Seepage Collection Dam (existing facility). The Southern Seepage Collection Dam can discharge to PCD 3.
  - Venetia Mine also proposes to construct a Northern Seepage Collection trench that will collect seep from the waste rock dump to the north of the mine. The collected seep water will be pumped to FRD 2 RWD for containment.
- Provision of pipelines and pumping systems:

- Pump stations will be constructed, and a pipeline network established to allow for efficient water reticulation and re-use of water.

4.2. Listed and specified activities applied for

The SWMP will trigger the following authorisations:

- An Environmental Authorisation ("EA") for listed activities contained in the Environmental Impact Assessment Regulations Listing Notices of 2014, as amended and published in terms of sections 24(2), 24 (5), 24D, 44 and 47(A) (1) (b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA").
- A Water Use Licence ("WUL") for water use activities listed in terms of section 21 (c), (i), (f) and (g) of the National Water Act (Act 36 of 1998) ("NWA").

For the EA application, a Scoping and Environmental Impact Assessment ("S&EIR") will be conducted in accordance with the NEMA and the Environmental Impact Assessment Regulations, 2014 (GN.R 982 of 4 December 2014) ("GN.R 982"), as amended. Listed activities have been identified and provided in Table 3.

The WUL application will be submitted in accordance to the *Regulations regarding the procedural requirements for water use licence applications and appeals*, Government Notice 267 ("GN.R 267"), dated 24 March 2017. An exemption from the requirements of the regulations on use of water for mining and related activities aimed at the protection of water resources ("GN.R 704"), dated 1999 will also be submitted.

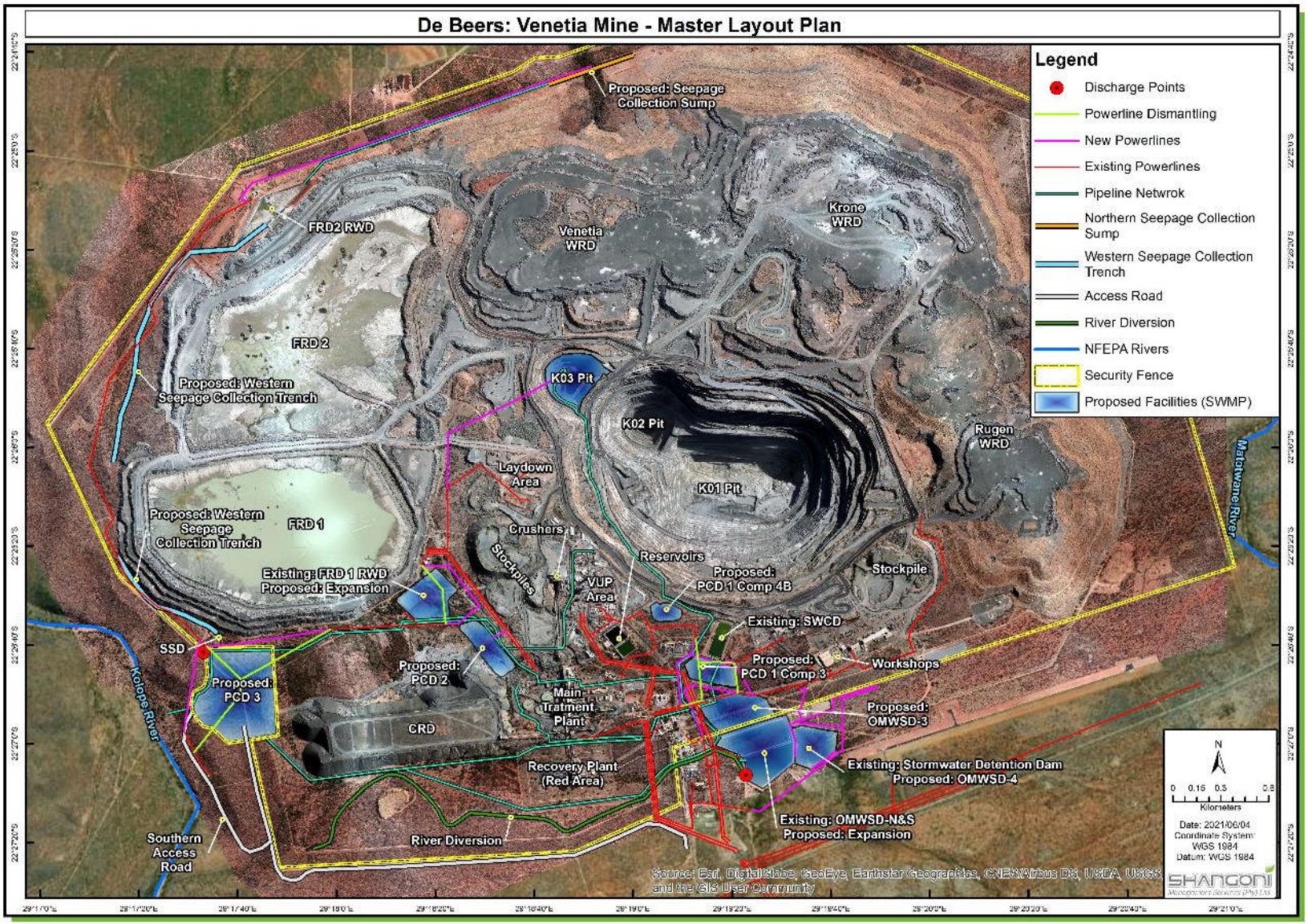

Figure 3: Layout map of the proposed activities associated with the SWMP

Table 3: Activities and listed activities associated with the SWMP

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
Site clearing of the footprint areas of the facilities			
PCD 1	3.83 ha	-	None identified as within mine-disturbed footprint.
PCD 2	4.78 ha		
PCD 1 Comp. 4B	1.77 ha		
FRD 1 RWD expansion	6.73 ha		
OMWSD North and South compartment expansion	12.54 ha		
OMWSD Compartment 3	7.94 ha		
OMWSD Compartment 4	1.77 ha		
PCD 3	26.5 ha	-	Activity 15 Listing Notice 2: *The clearance of an area of 20 hectares 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*
K 03 Pit	12.3 ha	-	None identified as within mine-disturbed footprint.

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
Mine water discharge	-		
Relocation of the mine boundary security fence (PCD 3 locality only)	Security fence = 0.73 ha Game fence = 0.35 ha	-	Activity 15 Listing Notice 2: *The clearance of an area of 20 hectares 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*
Upgrading of southern access road to access the PCD 3 locality	4.96 ha		
Re-routing 22kV powerlines and sub-stations	Approximately 8 km 12 ha		
Construction of storm water management infrastructure including channels and trenches	14.1 km		
Provision of pipelines and pumping systems	25.9 km	-	
Construction and utilisation of the facilities			

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
PCD 1	3.83 ha	-	Activity 13, Listing Notice 1 *The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.* Activity 6, Listing Notice 2 *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 throughput capacity of 2 000 cubic 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 cubic metres per day.* Activity 16, 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 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.*
PCD 2	4.78 ha	-	Activity 13, Listing Notice 1 *The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.* Activity 6, Listing Notice 2 *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;*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			(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 throughput capacity of 2 000 cubic 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 cubic metres per day.* Activity 16, 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 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.*
PCD 1 Compartment 4B	1.77 ha	-	Activity 6, Listing Notice 2 *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 throughput capacity of 2 000 cubic 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 cubic metres per day.*
FRD 1 RWD expansion	6.73 ha	-	Activity 34, Listing Notice 1 *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—*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			(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 cubic metres per day; or* *(iii) the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 cubic meters or less per day.* Activity 50, 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 cubic metres or more.* Activity 66, 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 metres or higher and where the height of the wall is increased by 2,5 metres or more; or* *(ii) where the high-water mark of the dam will be increased with 10 hectares or more.*
OMWSD North and South compartment expansion	12.54 ha	-	Activity 34, Listing Notice 1 *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 cubic metres per day; or* *(iii) the expansion is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will be increased by 50 cubic meters or less per day.* Activity 50, Listing Notice 1

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			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 cubic metres or more. Activity 66, 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 metres or higher and where the height of the wall is increased by 2,5 metres or more; or* *(ii) where the high-water mark of the dam will be increased with 10 hectares or more.* Activity 23, Listing Notice 3 *The expansion of—* *(i) dams or weirs where the dam or weir is expanded by 10 square metres or more; or* *(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres 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 metres 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 kilometres from national parks or world heritage sites or 5* *kilometres from any other protected area identified in terms of NEMPAA or* *from the core area of a biosphere reserve;*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
OMWSD Compartment 3	7.94 ha	-	Activity 13, Listing Notice 1 *The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.* Activity 6, Listing Notice 2 *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 throughput capacity of 2 000 cubic 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 cubic metres per day.* Activity 16, 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 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.*
OMWSD Compartment 4	5.12 ha	-	Activity 12, Listing Notice 1 *The development of—* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or* *(ii) infrastructure or structures with a physical footprint of 100 square metres or more;* *where such development occurs—* *(a) within a watercourse;* *(b) in front of a development setback; or*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			(c) if no development setback exists, within 32 metres 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.* Activity 13, Listing Notice 1 *The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.* Activity 19, Listing Notice 1 *The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres 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.*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			Activity 6, Listing Notice 2 *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 throughput capacity of 2 000 cubic metres or less; or* *(iii) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day.* Activity 16, 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 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.* Activity 14, Listing Notice 3 *The development of—* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or* *(ii) infrastructure or structures with a physical footprint of 10 square metres 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, within 32 metres 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.*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			e. Limpopo *i. Outside urban areas:* *hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.*
PCD 3	26.5 ha	-	Activity 12, Listing Notice 1 *The development of—* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or* *(ii) infrastructure or structures with a physical footprint of 100 square metres or more;* *where such development occurs—* *(a) within a watercourse;* *(b) in front of a development setback; or* *I if no development setback exists, within 32 metres 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.* Activity 19, Listing Notice 1

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres 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 6, Listing Notice 2 *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 throughput capacity of 2 000 cubic 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 cubic metres per day.* Activity 16, 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 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.* Activity 14 Listing Notice 3: *The development of—*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or *(ii) infrastructure or structures with a physical footprint of 10 square metres 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, within 32 metres 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;* *ff. Critical biodiversity areas or ecosystem services areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans.* *hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.*
K03 Pit	12.3 ha	-	Activity 6, Listing Notice 2 *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 throughput capacity of 2 000 cubic 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 cubic metres per day.*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
Mine water discharge	-	-	Activity 6, Listing Notice 2 *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 throughput capacity of 2 000 cubic 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 cubic metres per day.*
Relocation of the mine boundary security fence (PCD 3 locality only)	Security fence = 0.73 ha Game fence = 0.35 ha	-	None identified.
Upgrading of southern access road to access the PCD 3 locality	4.96 ha	-	Activity 19, Listing Notice 1 *The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres 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*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			(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 24, 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 meters, or where no reserve exists where the road is wider than 8 metres;* *but excluding a road—* *(a) which is identified and included in activity 27 in Listing Notice 2 of 2014;* *(b) where the entire road falls within an urban area; or* *(c) which is 1 kilometre or shorter.* Activity 4, Listing Notice 3 *The development of a road wider than 4 metres with a reserve less than 13,5 metres.* *e. Limpopo* *i. Outside urban areas:* *(gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas.* Activity 18, Listing Notice 3 *The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.* *e. Limpopo* *i. Outside urban areas:* *gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
Re-routing of 22kV powerlines and sub-station	Approximately 8 km 12 ha	-	None identified.
Construction of storm water management infrastructure including channels and trenches	14.1 km	-	Activity 19, Listing Notice 1 *The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres 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 14, Listing Notice 3 *The development of—* *(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or* *(ii) infrastructure or structures with a physical footprint of 10 square metres 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, within 32 metres 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.*

Name of Activity	Arial Extent of Activity Ha or m²	Listed/ Waste Activity (Mark with X)	Applicable Listing Notice (GN.R 983, GN.R 984, GN.R 985) and applicable Waste Management Activity (GN.R 921)
			e. Limpopo *i. Outside urban areas:* hh) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve.
Provision of pipelines and pumping systems	25.9 km	-	Activity 9, Listing Notice 1 *The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water—* *(i) with an internal diameter of 0,36 metres 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 storm water drainage inside a road reserve or railway line reserve; or* *(b) where such development will occur within an urban area.* Activity 10, Listing Notice 1 *The development and related operation of infrastructure exceeding 1 000 metres 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 metres 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.*

*NOTE: Venetia Mine is situated approximately 20 km south of the Mapungubwe National Park, which represents the nearest declared conservation area. In Government Notice No. 71 Government Gazette 31832 of 30 January 2009 the then Minister of Environmental Affairs and Tourism, announced the Mapungubwe

Cultural Landscape as a world heritage site in terms of the World Heritage Convention Act, 1999 (Act No. 49 of 1999). The Mapungubwe National Park also included a buffer zone that encompassed the already existing and operational Venetia Mine. In 2014, a new proposed buffer was assessed and approved by UNESCO at the 38th session of the World Heritage Committee (Doha, Qatar 2014) with such also accepted and welcomed in the Statement on the Cabinet Meeting of 25 June 2014 (dated 26 June 2014): "*2.3. Cabinet welcomes the approval of a new buffer zone for the Mapungubwe World Heritage Site by the World Heritage Committee of UNESCO which held its 38th Session in Doha, Qatar, from 15 to 25 June 2014. The new buffer zone is the result of a long consultation process involving landowners, community representatives, non-governmental organisations, mining companies and various government stakeholders. The approval of this new buffer zone is a welcome development for South Africa's efforts to improve the management and protection of its world heritage sites while allowing for responsible and sustainable development.*" This new buffer excludes Venetia Mine. The listed activities as applied for above under Listing Notice 3 may, therefore, no longer be applicable to the proposed project due to the new buffer being accepted by UNESCO. These listed activities have been included for completeness and consideration for exclusion/inclusion by the DMRE.

5. Policy and legislative context

The following table is a summary of the policy and legislative context applicable to the SWMP.

Table 4: Policy and legislative context

Applicable Legislation and Guidelines used to compile the Report	Compliance and response of the SWMP
The Constitution of the Republic of South Africa, 1996.	The Constitution of the Republic of South Africa was considered and applied to throughout the Scoping Report as the Constitution states that everyone has the right: (a) To 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.
The Mineral and Petroleum Resources Development Act (Act No. 28 of 2002, as amended).	The Scoping Report has been compiled to comply to the requirements of the Mineral and Petroleum Resources Development Regulations (GN.R 527 dated 2004).
The National Environmental Management Act (Act No. 107 of 1998 as amended).	The Scoping Report has been compiled in terms of GN.R 982, as amended and promulgated in terms of sections 24(5), 24M and 44 of the National Environmental Management Act, Act No. 107 of 1998 ("NEMA").
The Environmental Impact Assessment Regulations (GN.R 982 dated 2014, as amended).	The Scoping Report was compiled in terms of the requirements of Appendix 2 of the Environmental Impact Assessment ("EIA") Regulations (GN.R 982 dated 2014, as amended).
The Environmental Impact Assessment Regulation. Listing Notice 1. (GN.R 983 dated 2014, as amended).	Activity 9, 10, 12, 13, 19, 34, 50, 66 of Listing Notice 1 are applied for as part of the SWMP.
The Environmental Impact Assessment Regulation. Listing Notice 2. (GN.R 984 dated 2014, as amended).	Activity 6, 15, 16 of Listing Notice 2 are applied for as part of the SWMP.
The Environmental Impact Assessment Regulation. Listing Notice 3. (GN.R 985 dated 2014, as amended).	Activity 4, 14,18, 23 of Listing Notice 3 is applied for as part of the SWMP.
Integrated Environmental Management Guideline: Guideline on Need and Desirability (2017).	The need and desirability were assessed for the SWMP.
Mining and Biodiversity Guideline: Mainstreaming biodiversity into the mining sector.	Biodiversity related to the SWMP was considered when sites were selected, and alternatives considered.
The National Water Act (Act No. 36 of 1998, as amended).	The SWMP will require a water use license ("WUL") for the following: • Section 21 (c) and (i) for PCD 3, access road and OMWSD Compartment 4. • Section 21 (f) for the discharge of mine water. • Section 21(g) for the disposal of mine affected water into the facilities as proposed as part of the SWMP. The WUL will be applied for separately.
Regulations on use of water for mining and related activities aimed at the protection of water resources published in terms of the	Storm water management measures, in compliance to GN.R 704, will be implemented at the SWMP. Where relevant and licensed by the WUL, exemption to the GN.R. 704 will also be applied for.

Applicable Legislation and Guidelines used to compile the Report	Compliance and response of the SWMP
National Water Act under Government Notice 704 of 4 June 1999 (GN.R 704).	
The National Environmental Management: Biodiversity (Act 10 of 2004, as amended).	Biodiversity related to the SWMP and the alternatives were considered. Limpopo Department of Economic Development, Environment and Tourism ("LEDET") and the Environment will be consulted for permits in terms of National Environmental Management: Biodiversity (Act 10 of 2004, as amended) for the removal of nationally protected plant species, where required.
Alien and Invasive Species Regulations (GN.R 598 dated 2014).	The occurrence of alien and invasive species will be assessed and mitigated (in accordance with these regulations) during the construction and operational phase of the SWMP.
Conservation of Agricultural Resources (Act 43 of 1983).	Erosion potential will be assessed and mitigated (in accordance with this act) during the construction and operational phase of the SWMP.
The National Environmental Management: Air Quality (Act 39 of 2004, as amended).	No Atmospheric Emissions Licence is required for the SWMP.
SABS Code of Practice 0103 of 2008: The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication. SABS Code of Practice 0328 of 2008: Environmental Noise Impact Assessments.	The SABS Code of Practice 0103 will be taken into account when the mitigation measures for the SWMP are identified.
National Environmental Management: Waste Act (Act No. 59 of 2008, as amended).	No Waste Management Licence is required for the SWMP.
National Heritage Resources Act (Act No. 25 of 1999, as amended).	No archaeological or historical sites are affected by and in close proximity to the areas where the SWMP will be taking place.
DMRE Guideline for Consultation with communities and Interested and Affected Parties. As required in terms of sections 16(4)(b) or 27(5)(b) of the MPRDA, and in accordance with the standard directive for the compilation thereof as published on the official website of the Department of Mineral Resources.	The public participation process is done in accordance with the DMRE guideline for consultation with communities and interested and affected parties.
Integrated Environmental Management Information Series. Criteria for determining alternatives in EIA.	Alternatives were assessed for the SWMP in section 8.1 of this Scoping Report.
GN.R 93 Mine Health and Safety Regulations published under the Mine Health and Safety Act 29 of 1996.	Regulation 4.16(2) of the GN.R 93, Mine Health and Safety Regulations should be noted and adhered to as part of this project.

6. Need and desirability of the proposed activities

6.1. Need and desirability in terms of the guideline on need and desirability, 2017

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 Scoping Report and should be read in conjunction with the guideline.

6.1.1 How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?[1]

- The ecological integrity of the area will be assessed as part of the specialist assessments (biodiversity and wetland impact assessments) with the baseline environmental description provided in Section 8.4.1 below. The preliminary potential impacts that have been identified resulting from the SWMP have been discussed in Section 8.5 of this document. The impacts or any enhancements will be further discussed and assessed in greater detail as part of the Environmental Impact Assessment Report and Environmental Management Programme Report ("EIAR / EMPr").
- Alternatives have been identified to limit the impact to natural resources. Refer to section 8.1 for the alternatives identified and section 8.7 for the advantages and disadvantages of the alternatives identified. Refer to Chapters E, F and L of Section 8.4.1 of this Scoping Report and Section 8.5 for potential impacts.
- The construction of the facilities associated with the SWMP will not result in the generation of any waste and will not impact on renewable resources.
- The preliminary potential impacts on non-renewable resources that have been identified resulting from the SWMP have been discussed in Section 8.5 of this document. Further thereto, a separate WUL application will be submitted for the SWMP.
- The SWMP is proposed to ensure compliance to the requirement of GN.R 704 and prevent mine affected water entering the surrounding the environment. Further thereto, the SWMP is required to ensure sufficient water containment capacity is available to service the VUP.
- Although Venetia Mine is located adjacent to the buffer zone of the Mapungubwe National Park, the Phase 1 Heritage Impact Assessment has not identified any sites of cultural and heritage importance in the proposed footprint areas of the SWMP.
- The preferred alternative will reduce the loss of habitat associated with this project because of the existing impacts on a section of the proposed relocation area.
- The SWMP will allow continuation of mining activities. The SWMP, therefore, ensures that those who are already employed remain employed, which reduces unemployment in the area and transfers skills to employees.
- Since the SWMP is still in the Scoping Phase, any knowledge gaps, as well as relevant assumptions to the proposed SWMP will be further assessed as part of the EIAR / EMPr.
- All potential negative and positive impacts associated with the SWMP have been preliminarily identified and discussed in Section 8.5 below. These impacts will be discussed, assessed and the significance determined during the EIAR / EMPr phase. A conservative approach will be followed in terms of the identification and assessing of environmental impacts during the EIAR / EMPr phase.

[1] Section 24 of the Constitution and section 2(4)(a)(vi) of NEMA refer.

6.1.2 Promoting justifiable economic and social development[2]

- The mining industry contributes 7.1% (R 6.4 billon) to the Gross Value Added ("GVA") of Vhembe District municipality, as at 2018. Further thereto, the mining industry is responsible for 2 640 jobs in the Vhembe District Municipality, as at 2018.
- A Social and Labour Plan ("SLP") has been developed and implemented for Venetia Mine.
- The SWMP will allow continuation of mining activities and ensure security of the Life of Mine (to the year 2046) of Venetia Mine. The SWMP, therefore, ensures that those who are already employed remain employed, which reduces unemployment in the area and transfers skills to employees. Venetia Mine will also continue to contribute to the GVA of the Musina Local Municipality and Vhembe District Municipality.
- The needs of the community will be determined through the public participation process of this Scoping Report with the results of the public participation process presented in the Public Participation Report. The public participation process that has been conducted aims to ensure that all I&APs are provided with an opportunity of access to information regarding the SWMP and to raise any concerns or provide any comments on the SWMP. The SWMP further requires intergovernmental coordination and is undertaken as part of this project through consultation with all relevant stakeholders.
- Venetia Mine will ensure that the financial liability associated with the rehabilitation of the proposed activities of the SWMP is provided for as part the closure liability of Venetia Mine.

7. Period for which environmental authorisation is required

Venetia Mine has sufficient reserves to sustain a life of mine to the year 2046. The SWMP is proposed to take place during this life of mine. Therefore, the period for which environmental authorisation is required is at least to the year 2046, from the date of approval provided by the Department of Mineral Resources and Energy ("DMRE").

8. Description of the process followed to reach the proposed preferred site

8.1. Details of alternatives considered

The following information relating to alternatives and the consideration thereof was sourced from the *Technical Note – Conceptual evaluation of polluted water storage options*, dated 28 September 2020 and compiled by Jones & Wagener. The alternatives will be further assessed in the EIAR / EMPr.

[2] Section 24 of the Constitution refers.

8.1.1 Location alternatives

The mine proposed preferred locations for all the proposed water containment facilities. These locations were selected based on available space either within already disturbed areas or based on the surface drainage for the containment of affected surface water runoff. Only one location was selected for each of the water containment facilities, with the exception of the FRD 1 RWD, where a second compartment alternative site was identified. However, the alternative site was not further assessed as the proposed alternative site slopes relatively steeply from east to west. As a result, a significant amount of earthworks (fill) will be required to construct the dam embankment. From a topographic perspective, it is not regarded as an ideal site for FRD 1 RWD. It is for this reason that it was decided to expand the current FRD 1 RWD by raising the facility's wall by 3 m.

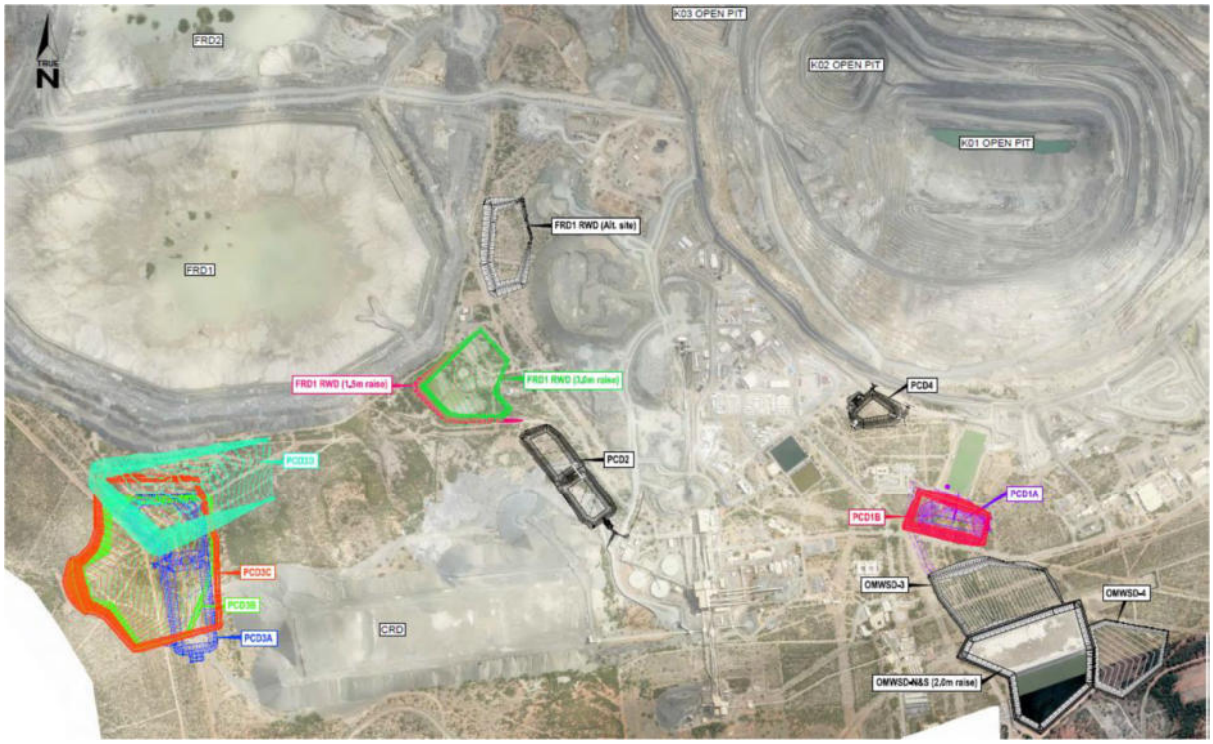

Figure 4: Map presenting the proposed facilities and identified alternatives.

8.1.2 Capacity alternatives

With an exception for PCD 2, PCD 1 - Compartment 4B and OMWSD Compartment 3 and 4, alternatives to the capacities of all the facilities were assessed. Capacity alternatives for PCD 2 and PCD 1 – Compartment 4B were not assessed, as such facilities were approved within the WUL (Licence No.: 14/A63E/ABCGIJ/5111) and the approved volumes considered as part of the SWMP capacity requirements. No alternatives were proposed for the OMWSD Compartment 3 and 4 due to the location of the proposed facilities. The capacity alternatives for the other facilities are summarised below:

- PCD 1:
    - PCD 1A - PCD1A was identified as a polluted water dam site and designed in 2015, as part of the IWUL amendment project. It is located to the south of the existing SWCD and has a catchment area of 26 ha. This dam will receive runoff from the workshop areas located towards

the east that currently flows into to the SWCD, following the construction of various planned dirty water canals. The 2015 design catered for a storage capacity of 60 000 m^3, as required to contain direct runoff to the dam.

- PCD 1B (preferred) - Construction of a single dam to receive runoff from the workshop area towards the east as well as runoff from the VUP terrace area, requiring a storage capacity of at least 90 000 m^3. To increase the capacity of PCD1A, a greater portion of the area south of SWCD will be utilised. The wall height will be increased to approximately 8 m. This option has a storage capacity of 120 000 m^3.

- PCD 2 (preferred) - PCD2 is located north-east of the CRD and was designed with two compartments separated by means of a dividing wall. PCD2 is constrained by the existing CRD's existing footprint to the south-west and by the future extension of the CRD dump to the west.
- PCD 3:
  - PCD 3A - PCD3A is located on the western boundary of Venetia Mine, between the FRD and CRD. Hence, to maximise storage capacity without encroaching on the outer security fence line, the facility adopted a "dog-leg" shape. The design entails two compartments (north and south), each having different shapes due to the spatial constraints.
  - PCD 3B - PCD-3B is an alternative location to PCD3A, with the pollution control dam located predominantly outside of the current security fence line, extending into the 'Vanzylsrus' area. PCD3B has an estimated maximum storage capacity of 750 000 m^3 and requires approximately 154 500 m^3 of excavation to create a suitably shaped basin. The dam wall height is currently limited to 12 m that will classify it as a 'small dam'.
  - PCD 3C (preferred) - PCD3C is positioned at the same location as PCD3B, between the Kolope River and the current mine security fence west of the mine. The main embankment will have a curved-shape (radius of 350m) to maximise the available space between the two koppies at Vanzylsrus. PCD3C will have an estimated storage capacity of 1 050 000 m^3 at a maximum embankment height of 13 m.
  - PCD 3D - PCD3D is positioned in between FRD1 and the CRD. This option was assessed as a potential fall-back option should it not be possible to construct PCD3B or PCD3C outside the mine fence. To optimise the potential storage capacity of the site, the dam was extended up to the outer mine fence. PCD3D will have an estimated storage capacity of 750 000 m^3. However, extensive earthworks will be required to build a U-shaped dam embankment with a crest length of approximately 1.35 km.

- PCD 1 – Compartmet 4B (preferred) – PCD 1 Compartment 4B is located to the west of the SWCD. This dam formed part of the 2015 design and was intended as an attenuation facility to contain runoff from the VUP terrace area. Water would be released to the SWCD as capacity at the latter facility became available. The dam was designed with a storage capacity of 30 000 m^3.
- OMWSD Compartment 3 (preferred) - The OMWSD-3 is located north of the existing OMWSD North Compartment. By adopting the same crest height as for the existing OMWSD North Compartment an estimated storage capacity of 275 000 m^3 can be achieved. In addition, the

proximity to the existing OMWSD allows for the utilisation of the existing pumping infrastructure at the dam, i.e. essentially operating as an extension to the OMWSD.

- OMWSD Compartment 4 (preferred) - OMWSD Compartment 4 is located on the eastern side of the existing OMWSD South Compartment and falls outside the existing mine security fence. The area is topographically a low point, and due to the location of the existing OMWSD dams, forms a basin at which storm attenuation occurs during major flood events. The OMWSD Compartment 4 crest elevation will be limited to that of the existing OMSWD North Compartment and OMWSD South Compartment (698.25 mamsl) in order to operate the dam as an extension of OMWSD South Compartment and / or OMWSD North Compartment. The footprint of OMWSD Compartment 4 is limited to the east in order to allow for clean water runoff to be diverted around the dam, into the existing clean water diversion system that bypasses south of OMWSD South Compartment. OMSWD Compartment 4 will have an estimated storage capacity of 200 000m^3. Earthworks will require 107 000 m^3 of excavation to establish a suitable dam basin and remove silt transported to low-lying area in previous flood events. The embankment fill volume will be significantly less (in order of 15 000 m^3), which will predominantly constitute the eastern and southern embankments.
- OMWSD North and South Compartments (preferred) - It is understood that the existing OMWSD North and South compartments will be re-lined in the next year or two. This provides the potential opportunity of increasing the capacity of the OMWSD by raising the embankments along the perimeter of the existing facility while it is decommissioned. The existing OMWSD North and South Compartment currently have a combined storage capacity of 460 000m^3 (260 000m^3 and 200 000m^3 for northern and southern compartments respectively). An embankment raise of 2 m will result in a total combined storage capacity of 660 000 m^3 for the northern and southern compartments combined (from the current 460 000 m^3). This assumes the existing divider wall between the two compartments remains as it is. Removing the dividing wall completely could yield an additional ± 30 000 m^3 storage capacity, whilst raising the dividing wall by 2 m would reduce the capacity by a similar order of magnitude.
- K03 pit (preferred)- The K03 pit is located to the east of FRD2 on the north-western perimeter of the open pit. The K03 pit is separated from the K02 pit by an unmined barrier wall that is approximately 250 m wide. The K3 pit has a total in-pit storage capacity of 3.5 million m^3, i.e. up to a highwall elevation of 640 m. The intention, however, is to limit the allowable storage capacity to a maximum level as defined by geological and geohydrological considerations.

8.1.3 No-go option

The no-go option would mean that the status quo of the environment would stay as is and there would be no additional impacts to the site. However, if the proposed construction of new water containment facilities and expansion of existing facilities do not continue, Venetia Mine will remain in non-compliance with pollution prevention principles and GN.R 704. Further thereto, this will have severe implications on the VUP as there may not be sufficient storage capacity to ensure continued removal of groundwater for the safe continuation of mining. Should the VUP not continue, this will result in the premature closure of Venetia Mine.

8.2. Details of the Public Participation Process followed

A detailed public participation process is undertaken as part of the initial application- and scoping phase for the SWMP. The following have been conducted as part of the Environmental Authorisation Application (proof hereof is included in the Public Participation Report attached as Annexure D to this report):

- Advertisements:
  - A Newspaper advertisement was placed in the local newspaper on 30 June 2021.
- Site notices:
  - Five (5) site notices were placed around the site as well as at the mine.
- Written notices:
  - Written notices, including Background Information Documents ("BIDs"), were distributed to Interested and Affected Parties ("I&APs").
- Availability of Scoping Report for public review:
  - This Scoping Report will be made available for public and stakeholder review for a period of 30 days (from 30 June to 30 July 2021). Notices providing the detail of the public viewing station and review period, were sent to registered I&APs via e-mail. This notification also formed part of the above-mentioned advertisement and site notices.

8.3. Summary of issues raised by I&APs

Table 5 below will be completed when the final Scoping Report is compiled and will provide a summary of the comments and issues raised and responses thereto.

Table 5: Summary of the issues raised by the I&APs

Interested and Affected Parties	Date Comments Received	Issues Raised	EAPs Response to Issues as Mandated by the Applicant	Section and Paragraph Reference in this Report Where the Issues and or Responses Were Incorporated.
To be completed upon completion of the public participation process.				

8.4. Description of baseline environment

8.4.1 The type of environment affected by the Project

A baseline description or *"status quo"* of the present environmental situation is provided in this part of the document. The following attributes / aspects have been described in detail, in the following respective chapters:

- Chapter A: Geology.
- Chapter B: Climate.
- Chapter C: Topography.
- Chapter D: Soils, Land Use and Land Capability.
- Chapter E: Vegetation.
- Chapter F: Fauna.
- Chapter G: Surface water.
- Chapter H: Groundwater.
- Chapter I: Air Quality.
- Chapter J: Noise.
- Chapter K: Archaeology and cultural history.
- Chapter L: Sensitive landscapes.
- Chapter M: Visual aspects.
- Chapter N: Regional socio-economic structure.

Chapter A: 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 - Draft report,* dated May 2021 and compiled by Shangoni Management Services (Pty) Ltd.

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 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 FRDs and CRD are situated primarily on the Venetia Klippe unit that comprises four units, the lowermost being quartsofeldspathic gneiss and ortho-amphibiolites. 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 quartsite. 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.

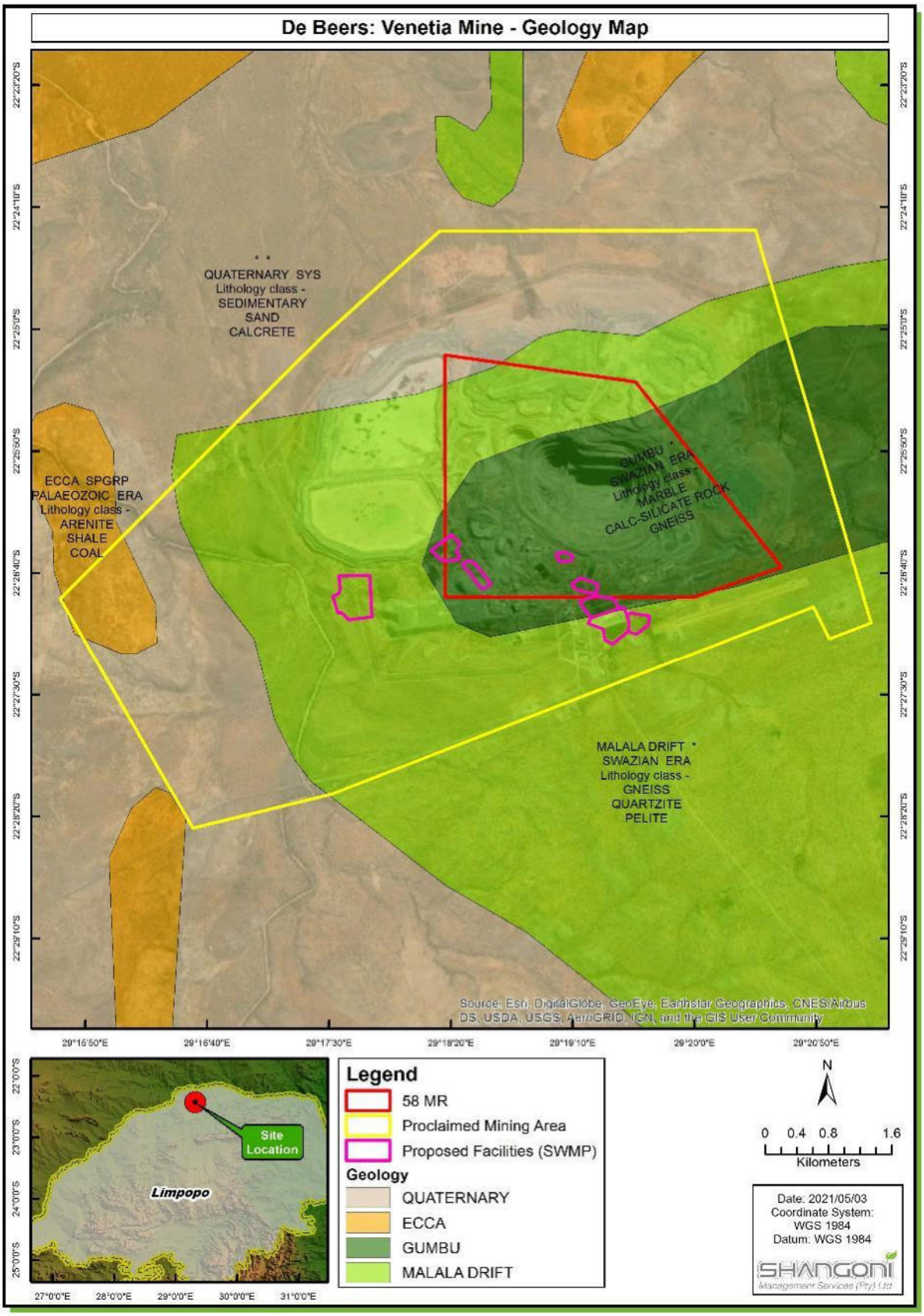

Figure 5: Geology associated with the proposed SWMP

Chapter B: Climate

The following information was sourced from the following reports:

- *Integrated Water and Waste Management Programme for De Beers Consolidated Mines (Pty) Ltd,* dated December 2019 and compiled by Prescali Environmental Consultants (Pty) Ltd.
- *De Beers Consolidated Mine (Pty) Ltd: Venetia Mine, Geohydrological Impact Assessment as part of the Storm water Management Project - Draft report,* compiled by Shangoni Management Services (Pty) Ltd, May 2021.
- *De Beers Consolidated Mines: Venetia Mine water balance life of mine and scenario report,* dated August 2020 and compiled by Jones & Wagener.

Venetia Mine is located in the Limpopo Province that experiences a sub-tropical climate in most of the province. The site is, however, also located in the western half of the province and close to Botswana where the climate is semi-arid to arid in the southern parts. It may be suggested that the Venetia Mine is located in a transitional zone of the two different climatic zones.

Rainfall

The Mean Annual Precipitation ("MAP") in this area varies between 300-400 mm, while the Mean Annual Evaporation ("MAE") is approximately 2050 mm.

Monthly rainfall figures from 1999 to current as recorded from a rainfall station on the mine is shown in Table 6 below. The data shows the majority of rainfall periods occur between the months of October to April.

Table 6: Monthly rainfall data as received and recorded at Venetia Mine

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1999	75.0	36.0	14.0	38.0	12.0	0.0	2.0	0.0	0.0	21.0	64.0	86.0	**348.0**
2000	191.0	158.0	331.0	4.0	0.0	9.0	32.0	0.0	0.0	5.0	32.2	63.0	**825.2**
2001	28.0	80.8	24.2	28.8	10.2	11.2	0.0	0.0	2.8	10.0	34.2	69.0	**299.2**
2002	46.4	17.2	3.8	11.8	0.0	4.0	1.0	1.8	11.8	34.0	12.8	6.0	**150.6**
2003	40.4	97.0	37.0	0.0	0.0	16.4	0.0	0.0	0.0	28.4	58.0	143.0	**420.2**
2004	11.0	28.0	182.0	8.0	0.0	0.0	0.0	0.0	0.0	30.0	36.0	71.0	**366.0**
2005	67.0	33.5	21.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	44.5	31.4	**203.4**
2006	77.5	68.0	68.0	0.0	0.0	0.0	0.0	0.3	0.0	10.9	81.0	0.0	**305.7**
2007	5.2	3.1	73.9	2.1	0.3	0.6	0.3	0.0	108.0	41.3	118.0	126.6	**479.4**
2008	75.8	3.0	13.7	73.0	0.8	0.2	0.0	0.0	0.0	0.0	60.4	83.2	**310.1**
2009	250.1	26.1	111.7	0.3	17.5	2.5	0.8	0.0	20.0	8.3	121.6	12.6	**571.5**
2010	124.9	8.0	34.9	262.1	0.5	0.0	0.7	0.0	0.0	0.0	99.0	78.2	**608.3**
2011	165.0	11.8	10.8	32.5	0.0	0.0	1.2	0.0	0.0	50.5	127.9	31.0	**430.7**
2012	46.2	10.7	1.1	0.0	0.0	0.0	0.0	0.0	12.4	26.7	41.1	41.0	**179.2**
2013	452.0	21.8	15.4	24.1	0.0	0.0	2.0	3.8	0.0	40.6	45.2	76.8	**681.7**

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
2014	109.5	60.4	122.4	3.1	0.0	0.0	0.0	0.0	0.0	2.4	63.1	126.5	**487.4**
2015	3.3	35.9	54.6	37.8	0.0	0.6	0.0	0.0	45.0	12.5	28.5	44.5	**262.7**
2016	92.8	33.4	94.0	1.5	9.0	1.5	2.9	0.0	0.0	21.9	38.5	113.8	**409.3**
2017	116.9	48.4	14.0	5.0	0.6	0.0	0.0	0.0	0.0	57.5	61.3	4.9	**308.6**
2018	10.4	143.3	9.8	1.8	13.6	0.0	0.1	0.0	2.0	9.3	36.1	83.6	**310.0**
2019	102.4	139.1	0.6	46.9	0.0	0.0	0.0	0.0	0.0	0.0	99.4	43.6	**432.0**
2020	8.1	86.7	11.2	3.0	0.0	0.6	0.0	6.7	0.3	28.7	32.7	116.8	**294.8**
2021	231.0	161.2	3.7	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**400.4**
Avg	**101.3**	**57.0**	**54.5**	**25.6**	**2.8**	**2.0**	**1.9**	**0.5**	**8.8**	**19.1**	**58.1**	**63.2**	**394.8**

Temperatures

Average monthly temperatures recorded at Venetia Mine for the period June 2006 to April 2011 are presented in the tables and figures below. 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.

Chapter C: Topography

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 - Draft report,* compiled by Shangoni Management Services (Pty) Ltd, May 2021.

The regional topography consists of low hills and wide valleys, varying in elevation from 700 mamsl in the south to 600 mamsl at the topographical lows in the north (refer also to Figure 6). The surface topography and associated landscape within the mine's boundary has been altered by various mine residue deposits such as fine residue deposits (FRDs), coarse residue deposits (CRDs), waste rock dumps (WRDs) and the open pits, K1-K3. On a regional scale, surface water flow is from south-east to north-west.

The site is located predominantly in the Matotwane River catchment, with the river located to the east of the mine boundary. The Kolope River runs along the western boundary of the mine. Prior to mining, an unnamed tributary of the Matotwane River ran from south to north through the mine and is still thought to play an important role in the surface water and groundwater dynamics downstream of the site, especially downstream from the WRDs.

Chapter D: Soils, land use and land capability

The following information was sourced from the *Botanical Impact Assessment for the proposed Storm Water Management Project for De Beers Consolidated Mines - Draft,* compiled by Bathusi Environmental Consulting, June 2021.

Three soil units are present at Venetia Mine as follows (refer also to Figure 7):

- Unit A:
    - Unit A refers to yellow and red soils without water tables and belonging in one or more of the following soil forms: Inanda, Kranskop, Magwa, Hutton, Griffin and Clovelly. The soil units refer to land which does not qualify as a plinthic catena and in which one or more of the above soil forms occupy at least 40 % of the area. In Ae (red-yellow apedal, freely drained soils, red high base status, 450 - 700 mm deep, no dunes) and Ah (red and yellow, high base status), yellow soils occupy less than 10 % of the area while dystrophic and/or mesotrophic soils occupy a larger area than high base status red-yellow apedal soils. Resultant soils are generally poorly suited for arable agriculture and clay contents are generally lower than 15 %. Soil depths vary between 450 and 750 mm.
- Unit D:
    - Units Da – Dc accommodate land where duplex soils are dominant, indicating a high erodibility, containing dominant prismacutanic and/ or pedocutanic diagnostic horizons and where the B horizons are generally not red. Upland soils that display duplex character include Estcourt, Sterkspruit, Swartland, Valsrivier and Kroonstad forms. Db refers to land where duplex soils with non-red B horizons comprise more than half of the area covered by duplex soils. Soils in these areas, despite comparatively deep (> 750 mm), are of intermediate suitability for arable agriculture where the climate permits.
- Unit F:
    - Unit F mainly includes Glenrosa and/ or Mispah forms (predominantly stony, rocky, but other forms may also occur) and is intended to accommodate pedologically young landscapes that are not predominantly rock and not predominantly alluvial or aeolian and in which the dominant soil forming processes have been rock weathering, the formation of orthic topsoil horizons and, commonly, clay illuviation, giving rise typically to lithocutanic horizons. The soil forms that epitomise these processes are Glenrosa and Mispah. However, exposed rock and soils belonging in almost any of the other soil forms may be found in these land types, provided these other soils do not qualify the land for inclusion in another map unit. Shallow and deep soils of the Oakleaf form (usually on upland sites) developed by rock weathering are accommodated here. Fc refers to land where lime occurs regularly (there do not need to be much of it, and it need not occur in every soil present) in upland and valley bottom soils. Soil depth is generally less than 450 mm; clay percentage is less than 15 %. Resultantly soil potential is of intermediate suitability for arable agriculture where the climate permits.

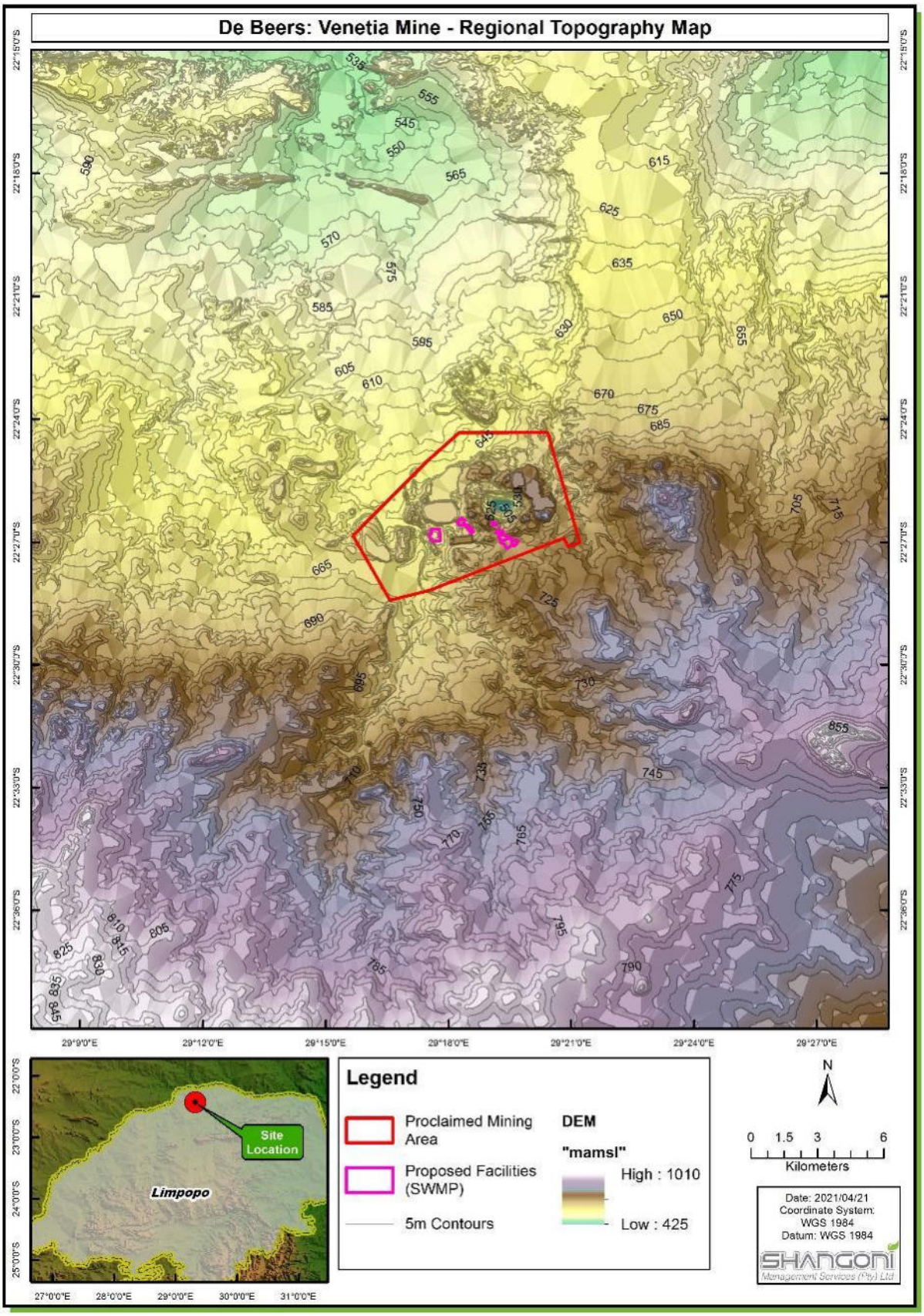

Figure 6: Map showing topography of the proposed SWMP

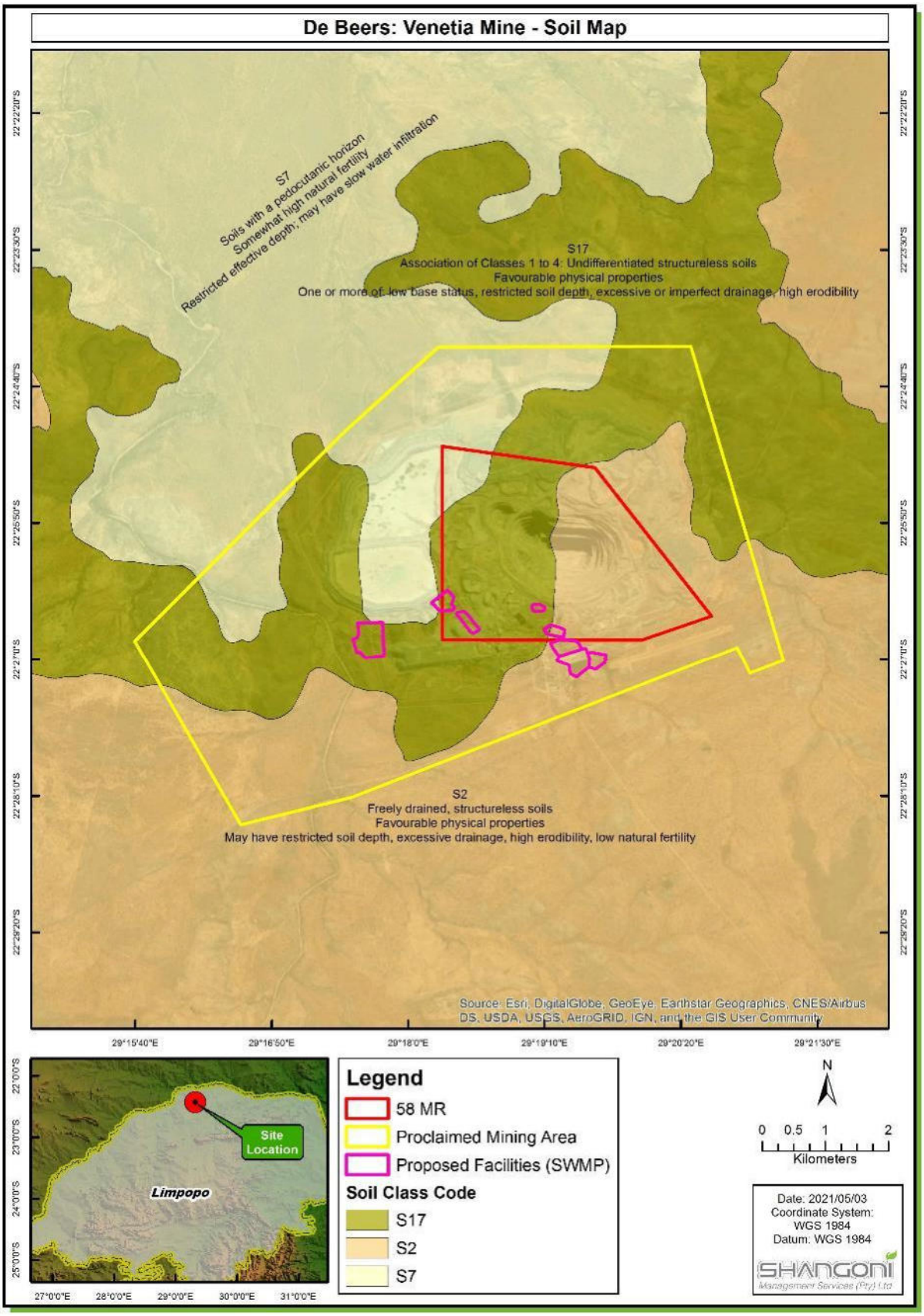

Figure 7: Map showing soils associated with of the proposed SWMP

Chapter E: Vegetation

The following information was sourced from the *Botanical Impact Assessment for the proposed Storm Water Management Project for De Beers Consolidated Mines - Draft,* compiled by Bathusi Environmental Consulting, June 2021.

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) (refer also to Figure 8). 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.

Results of the floristic assessment of the proposed development footprints indicated the following key considerations:

- An Alpha Diversity of 105 species was collectively recorded from the study sites, which corresponds (numerically) to 20.3 % of the sampling records from the wider region, also reflecting a moderate floristic diversity.
- A brief review of the growth forms recorded from the site assessments provides insight into the savannoid nature of the immediate region, with the tree and shrub components collectively dominating the physiognomy, which correlates with the physiognomy from the wider region.
- A total of 31 plant families were recorded during this instantaneous survey bout, dominated by the Poaceae family, while Fabaceae and Malvaceae were moderately represented, also correlating with collection records from the wider region.
- A total of 7 plant species of conservation concern (NFA, IUCN, LEMA) are known to occur within the wider region (NEWPOSA 2021).
- Records from the site inspection indicated a total of 4 (four) plant species of conservation concern present within the proposed footprints:
    - *Adansonia digitata* (Baobab, NFA 2014).
    - *Boscia albitrunca* (Shepard's Tree, NFA 2014).
    - *Combretum imberbe* (Leadwood, NFA 2014).
    - *Philenoptera violaceae* (Apple Leaf, NFA 2014).
    - *Sclerocarya birrea* (Marula, NFA 2014).

The floristic evaluation of the footprints indicated a suite of highly variable woodland types that are largely associated with slopes, rockiness, moisture regimes and also indicating deleterious effects of mining-related activities. The following broad-scale habitat types were recorded across the various development footprints:

- Artificial Impoundments (not mining containment dams) – mostly exhibiting a moderate floristic sensitivity.
- Deteriorated “Acacia” Woodland – mostly exhibiting a moderate-low floristic sensitivity.
- Deteriorated Mixed Woodland – mostly exhibiting a moderate-low floristic sensitivity.
- Existing water storage facilities – mostly exhibiting a low floristic sensitivity.
- Floodplain grassland – mostly exhibiting a moderate-low floristic sensitivity.
- Mixed woodland (Deteriorated) – mostly exhibiting a moderate-low floristic sensitivity.
- Mixed woodland on quartzitic and calcareous soils – mostly exhibiting a moderate-high floristic sensitivity.
- Natural Mixed Woodland – mostly exhibiting a moderate-high floristic sensitivity.
- Rehabilitated land – mostly exhibiting a low floristic sensitivity.
- Riparian Mopane Thickets and Riparian Thickets – mostly exhibiting a moderate-high floristic sensitivity.
- Transformed and Deteriorated Land – mostly exhibiting a low floristic sensitivity.

Chapter F: Fauna

The following information was sourced from the *Terrestrial biodiversity executive summary for scoping,* compiled by Bathusi Environmental Consulting, May 2021.

The expected mammal richness on the study site and immediate surroundings is high; available data records indicate a total of approximately 90 species sympatric to the study area. However, much of the high mammal richness is likely to be inferred from the nearby Venetia-Limpopo Nature Reserve (“VLNR”) and not necessarily the occurrence of these species within the Venetia Mine property.

- The actual, observed mammal richness from the proposed footprint sites is significantly lower than the expected richness, with a total of 20 species confirmed from the proposed footprints and immediate surrounds. Prominent observed species relate to "spill- over" game species from the adjacent VLNR with conspicuous taxa being Plains Zebra (*Equus quagga*), Common Warthog (*Phacochoerus africanus*), African Civet (*Civettictis civetta*), genets (*Genetta spp.*), Greater Kudu (*Tragelaphus strepsiceros*), Impala (*Aepyceros melampus*), Black-backed Jackal (*Canis mesomelas*) and two primate species, namely Chacma Baboon (*Papio ursinus*) and Vervet Monkey (*Cercopithecus pygerythrus*). Apart from these species, the African Elephant (*Loxodonta africana*) and the Lion (*Panthera leo*) were observed in the nearby VLNR and could, occasionally, migrate through the proposed access road to PCD 3 and the PCD 3 site itself.
- The globally vulnerable Leopard (*Panthera pardalis*), globally near threatened Brown Hyaena (*Parahyaena brunnea*) and the regionally near threatened Serval (*Leptailurus serval*) were the only three mammal species of concern that were recorded within the proposed footprints during the brief site inspection. These three species are the only species of concern with a high frequency of occurrence on the study area, especially in the southern and western part of the study area (corresponding to the proposed south road and PCD 3 footprint).

- The amphibian richness on the study site is considered be moderate, with 16 frog species expected to occur, of which the Foam-nest Frog (*Chiromantis xerampelina*) appear to be prominent.
- The reptile composition on the study site is poorly known with only 47 species currently known from the wider study area, of which six species were confirmed on the proposed footprint sites. The Nile Crocodile (*Crocodylus niloticus*) was recorded in the small artificial impoundment on the proposed PCD 3 site, although opportunistic records within the mine perimeter have also been indicated, probably relating to migrating individuals that utilise artificial impoundments as 'stepping stones' between areas of suitable habitat.
- A brief appraisal of available (SABAP 2) data indicated that a total of approximately 282 bird species were previously recorded in the wider study area (3 x 3 pentad area surrounding the site), of which 112 species were observed during the April site visit.

A total of nine (9) bird species of conservation importance has been recorded in the area (sensu SABAP2 and personal observations) which include five (5) globally threatened species, one (1) globally near threatened species and one (2) regionally near threatened species. These species include mainly large-bodied and iconic birds of prey species (c. White-backed Vulture *Gyps coprotheres*, Martial Eagle *Polemaetus bellicosus*, Bateleur *Terathopius ecaudatus*, Tawny Eagle *Aquila rapax*, Lanner Falcon *Falco biarmicus*) that are regarded as occasional foraging visitors to the study area. None of these species were recorded from the study area and are not considered likely to utilise any of the proposed footprint sites for breeding purposes. However, these species are nonetheless considered likely to utilise habitat within the adjacent VLNR for breeding and foraging purposes; an active nest of the globally endangered Martial Eagle *P. bellicosus* was observed approximately 4 km west of the study area).

Chapter G: Surface water

The following information was sourced from the report *Integrated Water and Waste Management Programme for De Beers Consolidated Mines (Pty) Ltd*, dated December 2019 and compiled by Prescali Environmental Consultants (Pty) Ltd.

Venetia Mine falls within the Limpopo Water Management Area and quaternary catchment A63E. 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 (refer also to Figure 9and Figure 10). 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 bear 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.

It has been noted that prior to the mining excavations, a small ephemeral streambed “Central” passed through the centre of the pit running from south to north and this was deviated via a canal to the west towards the Kolope River. Nevertheless, under extreme rainfall conditions, this area can still transport water into the pit as this remains a preferential water flow path. The general surface topography of the site indicates that the majority of rainfall runoff will flow in a north north-westerly direction along the gentle gradient of 0.008 m/m towards the Kolope River.

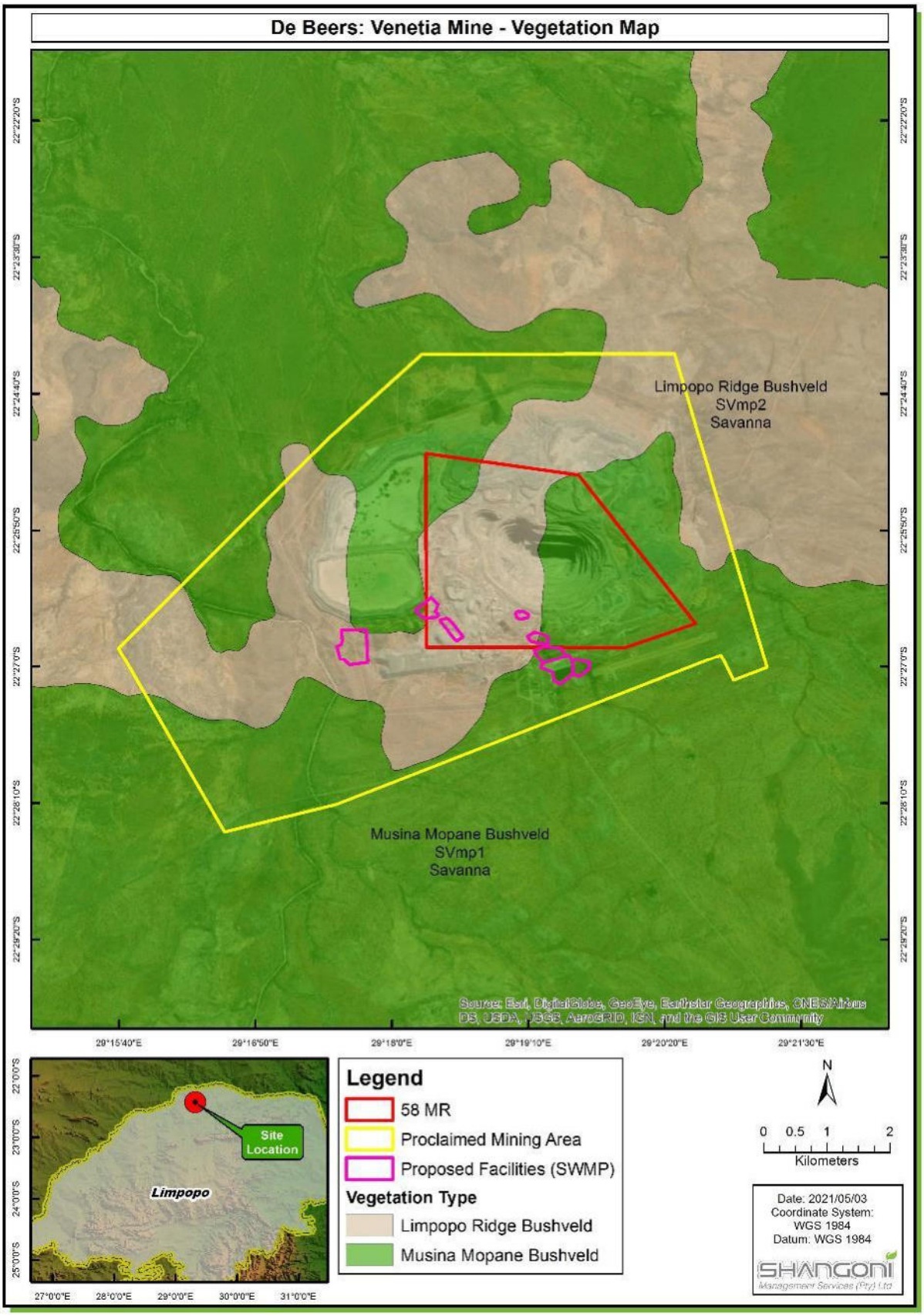

Figure 8: Vegetation associated with the proposed SWMP

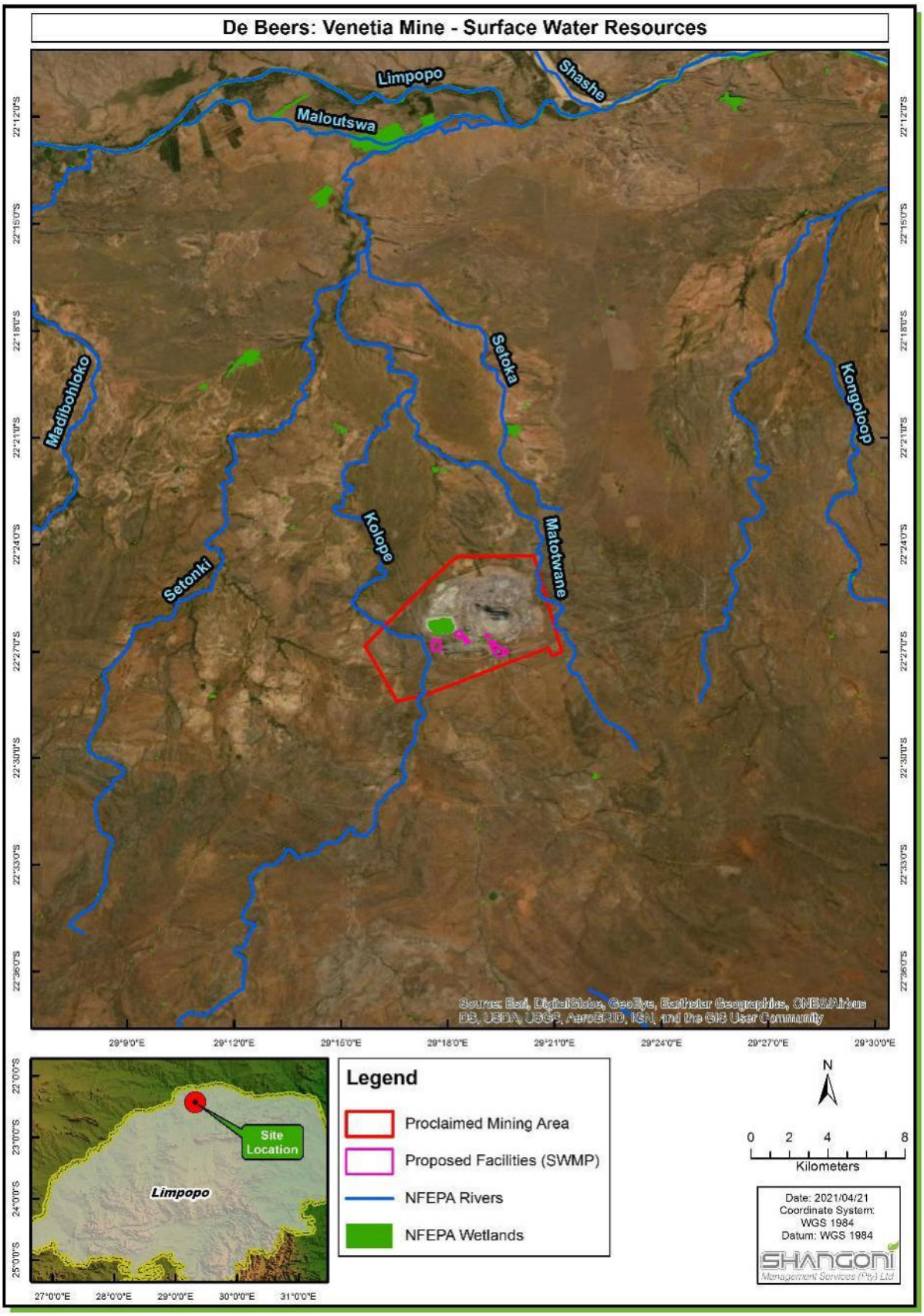

Figure 9: Surface water resources associated with Venetia Mine

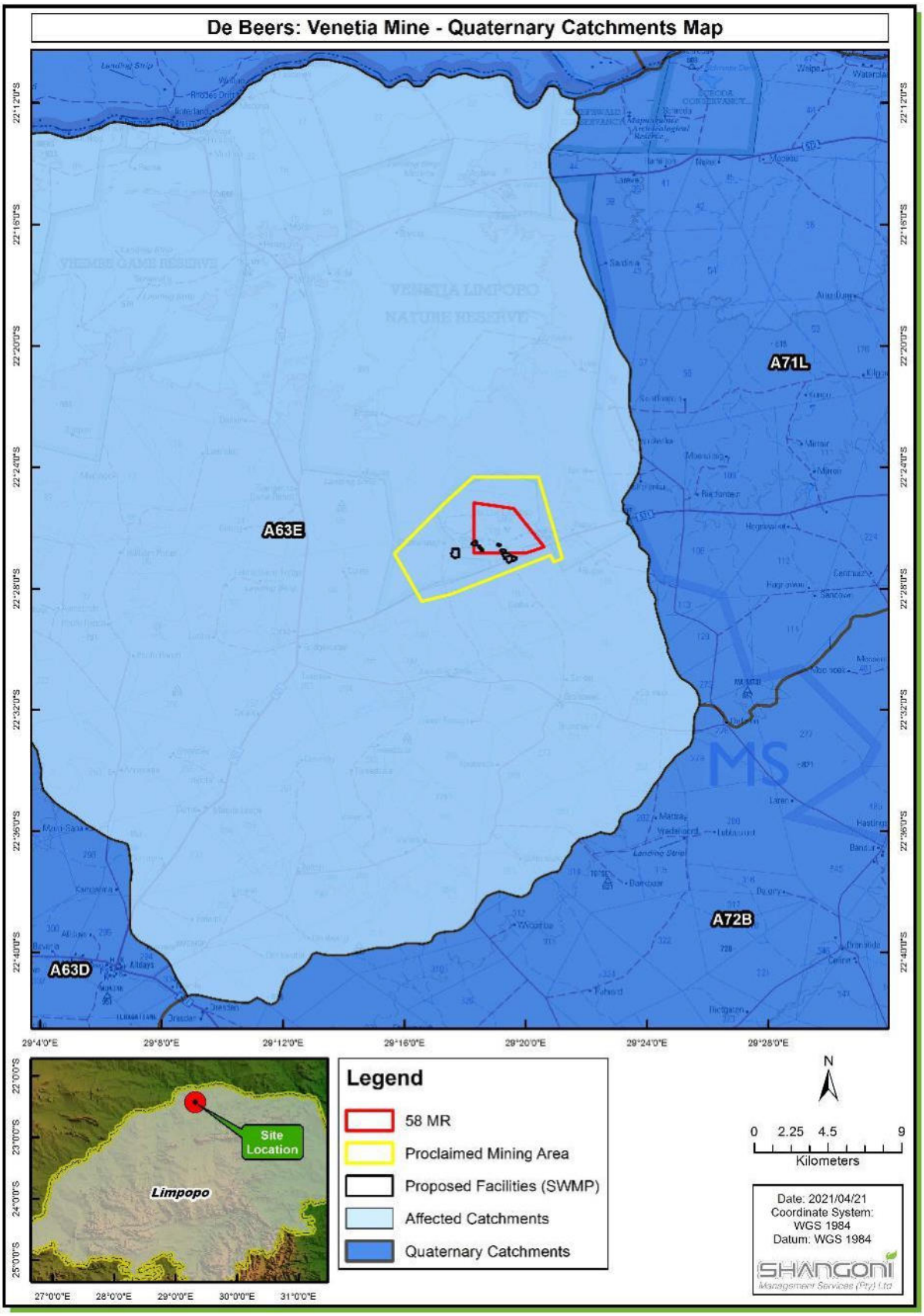

Figure 10: Catchments associated with Venetia Mine

Chapter H: Groundwater

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 - Draft report*, compiled by Shangoni Management Services (Pty) Ltd, May 2021.

Two distinct undisturbed saturated groundwater regions are recognized underlying the study area, and include:

- Weathered aquifer.
- Fractured aquifer.

A good correlation of 0.99 was achieved between static hydraulic heads and surface elevation and it can therefore be assumed with relative accuracy that groundwater flow directions largely correlate with surface flow. Groundwater flow patterns based on hydraulic head contours also verified this with flows being largely directed from a higher hydraulic head to a lower hydraulic head perpendicular to head contours, following a similar pattern and gradients compared to surface flows.

The groundwater levels within the weathered and fractured aquifer are relatively shallow being of semi-confined to confined nature and also influenced by a cone of depression resulting from dewatering. Despite mining for more than 30 years, this cone is confined to the immediate vicinity of the pit, mainly as a result of the low hydraulic conductivity of the host rock. Previous studies have shown that a 1 km radius of influence exist (based on worst case scenarios), but still does not extend beyond the mine boundary.

The history of mining has resulted in an altered surface topography with various mine residue deposits and affected water storage facilities on surface. Recharge from rainfall percolates through the dumps and the unsaturated zone into the weathered aquifer resulting in mineralisation of salts and nutrients. This study revealed that TDS mostly contributed by the salts Na, Cl, SO_4, trace metals B and Mo and inorganic nitrogen (as NH_4 and NO_3) are the main contaminants of concern. There are also various controlled and uncontrolled seepage points at Venetia Mine. The uncontrolled seepages flow directly into the surface water environment whereas the controlled seepages flow into affected water storage facilities.

The average depth to groundwater is in the order of 8 m with depths up to 31 m immediately adjacent to the pit. This unsaturation zone provides some attenuation capacity for the vertical migration of contaminants. Once the vertical migration of dissolved contaminants reaches the groundwater, the dominant migration pathway alters from a vertical to a lateral direction. Flow directions mimic the topography with possible dissolved contaminants migrating towards the surface water systems to the west and north of the dumps. Some migration from the WRD is also expected towards the pit as a result of the influence from the dewatering cone.

Due to the low permeability of the host rock, contaminant migration is a very slow process. Jones and Wagener (2020) assigned natural recharge rates of 8.22×10^{-6} m/d to the base of the PCDs and very limited plume migration from the PCDs occurred within their model. Although some seepage is expected

from unlined water storage facilities, the migration thereof would be limited and local (within dam footprint) due to the low aquifer permeability, flat natural aquifer gradients and the low recharge of 3 mm/a.

Chapter I: Air Quality

The following information was obtained from the 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.
- *Annual ambient air quality monitoring report for Venetia Mine, Limpopo Province, Reporting period February 2020 - January 2021*, and compiled by Levego Environmental Services.

Regional description

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) and 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.
- Agricultural activities.

Local description

Dust fallout monitoring

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 8 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 (1200 mg/m^2/day). The sparse and erratic rainfall throughout the year in this region does not influence dustfall rates significantly. These findings align well with field observations.

Particulate matter (PM10 and PM2.5)

Venetia Mine has established 2 particulate monitoring sites (western fence and main offices). No exceedance to the standards were recorded during the annual reporting period.

SO_2 passive sampling

SO_2 passive diffusive monitors were installed at the four principal directions around the open burning grounds and co-located with dustfall monitoring samplers. The samplers provide an indication of amount of SO_2 that is generated from burning explosives packaging at the burning ground site. All sulphur dioxide concentrations recorded on site during February 2020 – January 2021 demonstrate full

compliance with the twelve months running average. Annual average concentrations for the February 2020 – January 2021 are compliant with the relevant standard of 50 µg/m^3.

LDAR sampling

Majority of valves, pumps, connectors, pressure relief devices and open-ended lines were found to be emission free, with TVOC concentrations correlating to normal ambient concentrations at the diesel and oil storage areas. None of the sources exceeded the prescribed leak definition of 500 ppm. These points were only identified for observation, as possible future source of leaks.

Chapter J: 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.

Sixteen (16) 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 35.1 ºC and during the night 24.1 ºC to 26.5 ºC.

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 pre-vailing 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 IFC.

Chapter K: Archaeology and Cultural History

The following information was obtained from the *1st phase H.I.A. of a proposed upgrading and extension of the proposed storm-water management project at Venetia Mine, Limpopo Province, South Africa For De Beers Consolidated Mines (Pty) Ltd.*, compiled by Sidney Miller dated May 2021.

The general area is known to contain both Early as well as Later Stone Age sites as well as rock art and engraving sites. These are mainly encountered along main drainage lines such as the Limpopo River and its tributaries such as the Kolope River. None of these were observed during the investigation. The proposed SWMP and associated infrastructure will have no impact on Stone Age archaeological sites or material. In the general area Iron Age sites such as the internationally known Mapungubwe and its associated sites is situated more to the north and east of Venetia Mine, and later sites to the south in the Soutpansberg. None of these were observed during the investigation. The proposed SWMP and associated infrastructure will have no impact on Iron Age archaeological sites or material. The proposed SWMP and associated infrastructure will have no impact on historical sites or material. There are no sites of cultural/spiritual significance located on or near the areas under investigation. There are no sites connected to slavery located on or near the areas under investigation. There are no people of importance connected to the history of the study area. There is no special historical technological or scientific advancement of standing that can be linked to the property under investigation.

Chapter L: Sensitive Landscapes

Botanical Impact Assessment for the proposed Storm Water Management Project for De Beers Consolidated Mines - Draft, compiled by Bathusi Environmental Consulting, June 2021.

A review of available information sources indicates the following local and regional (terrestrial biodiversity and ecology) conservation categories ascribed to the wider study area:

- The proposed SWMP footprint areas are situated, mostly, within the Venetia Mine perimeter, which is situated within the VLNR.
- Venetia Mine is situated approximately 20 km south of the Mapungubwe National Park, which represents the nearest declared conservation area. In Government Notice No. 71 Government Gazette 31832 of 30 January 2009 the then Minister of Environmental Affairs and Tourism, announced the Mapungubwe Cultural Landscape as a world heritage site in terms of the World Heritage Convention Act, 1999 (Act No. 49 of 1999), and delegated specified powers of management to SANParks. The Mapungubwe National Park also included a buffer zone that encompassed the already existing and operational Venetia Mine. In 2014, new proposed buffer was assessed and approved by UNESCO at the 38th session of the World Heritage Committee (Doha, Qatar 2014). This new buffer excludes Venetia Mine.
- The National List of Threatened Ecosystems (2011) information source indicates that the SWMP footprint areas are not situated in proximity to any of the threatened ecosystems from a regional perspective. The closest threatened ecosystem is represented by the Mapungubwe/ Greefswater Riverine Forest that is situated approximately 22 km to the north (spatially included in the Mapungubwe National Park).
- Venetia Mine and proposed development footprints are situated within the Limpopo Ridge Bushveld (SVmp2) and Musina Mopane Bushveld (SVmp1) ecological types, as described by Vegmap (2018), both of which are ascribed a conservation status of Least Threatened.
- The Limpopo Province C Plan indicates the nodal and transformed status of much of the natural habitat from the Venetia Mine, which is spatially situated within a natural (and conserved) area of natural and pristine habitat, comprising the following categories:
    - No natural habitat remaining.
    - Other natural areas (natural habitat of indeterminate status).
    - Ecological Support Areas (“ESA”) 2.
    - Ecological Support Areas 1.
    - Critical Support Areas 2.

As presented in Figure 11 below, the proposed PCD 3 is located within an ESA 1. Further thereto, there are three drainage lines that traverse the area in which the proposed PCD 3 will be located. The presence of wetlands will be verified by the appointed wetland specialist as part of the Wetland Assessment and GN.R 509 Risk Assessment that are currently being undertaken. Details of the report will be included in the EIAR / EMPr.

Chapter M: Visual aspects

Due to the topography within the Mining Right area, operations at Venetia Mine are only visible from the regional road R521, that runs past the mine connecting All-days to Musina. Current mining operations extend approximately 6 km along the R521 road.

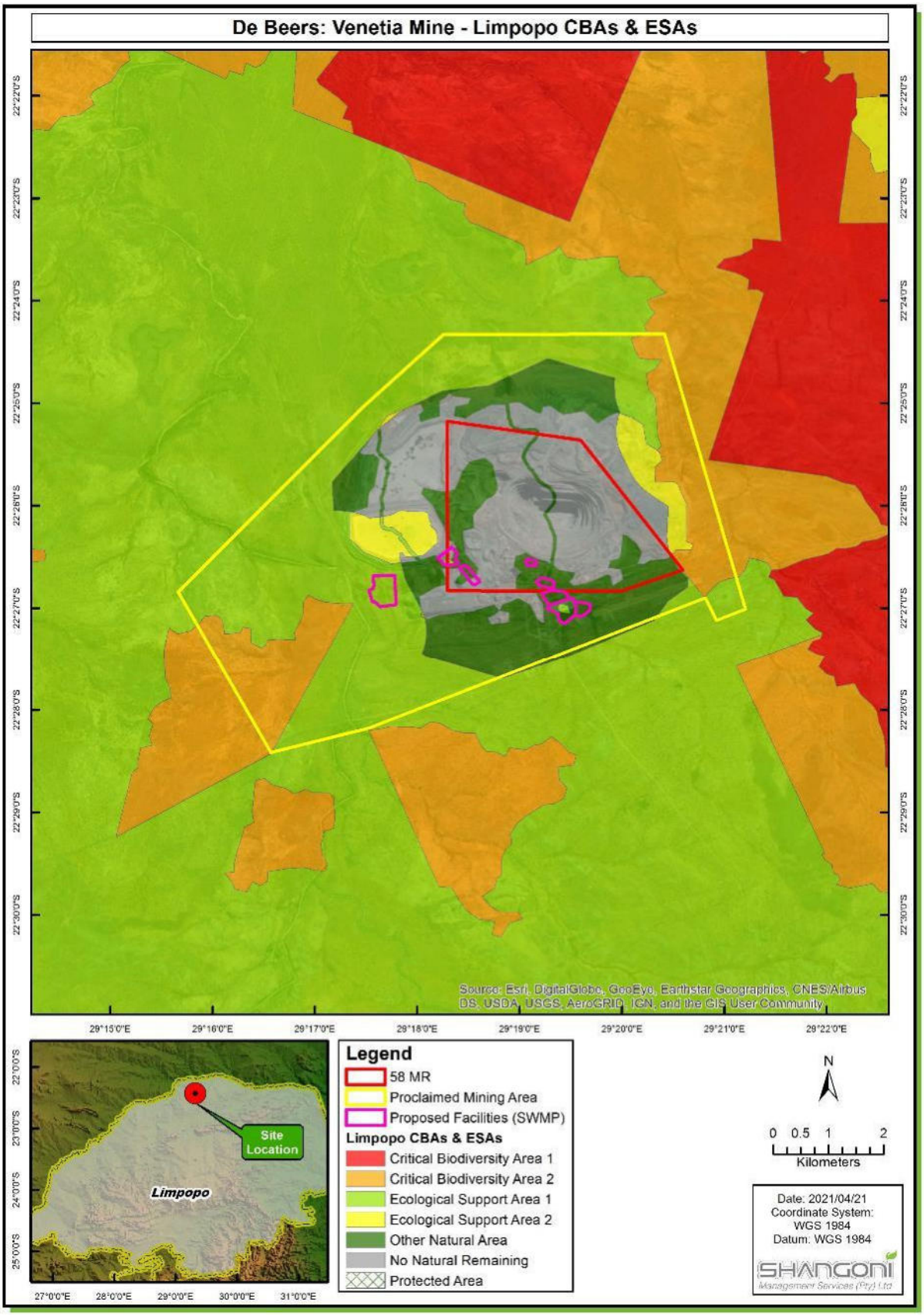

Figure 11: Critical Biodiversity Areas associated with the SWMP

8.5. Impacts and risks identified

Table 7 below contains preliminary potential impacts that have been identified for the SWMP described in the final site layout plan. A detailed risk assessment will be undertaken as part of the EIAR / EMPr, in which the duration, probability, magnitude and reversibility of the impacts will be determined, and the significance of the impact calculated. Potential cumulative impacts have also been determined and are presented in Table 7.

Table 7: Preliminary determination of potential impacts of the SWMP

Environmental component	Activity	Potential Impact description
Geology	No impact to geology will occur as a result of the proposed SWMP.	
Topography	Alteration of the natural drainage patterns	The construction and expansion of the facilities associated with the SWMP will influence the nature of the topography that is typical of the surrounding area with such changes stemming from the dam walls. The natural drainage patterns, with specific focus on PCD 3, will also be altered as PCD 3 will be constructed to contain affected water from runoff from site.
Soil, land use and land capability	Clearing of soil	The removal of topsoil may result in the mixing of the horizons of the soil that will have an impact on the fertility and production potential of the soil.
		The temporary stockpiling of topsoil may result in a decrease in the fertility of the soil and the leaching of minerals due to exposure of the soil to elements.
		A loss of microbes and viable seed may occur as a result of the temporary stockpiling of topsoil.
		Soil compaction and topsoil loss through erosion may occur as a result of construction related activities (including the temporary stockpiling). This will further lead to a loss of soil fertility.
		The construction activities associated with the proposed storm water management infrastructure may impact on soil in terms of compaction and possible spillages from machinery.
		Ineffective erosion control along haul roads may lead to siltation of downstream water resources and scouring of soil.
Surface water	Surface water contamination and alteration of natural drainage patterns	In the event of chemical or hydrocarbon spillages on soil, surface water runoff that comes into contact with the soil may become contaminated and enter the receiving environment and / or water resources. This will have an impact on surface water quality.
		Surface water contamination may occur should the separation of clean- and dirty water management areas not be effectively implemented.
		Dam failure may result in affected water enter the receiving environment and / or water resources. This will have an impact on surface water quality.
Groundwater	Groundwater contamination	Potential seepage of water to the groundwater regime may contaminate groundwater resources.
		Groundwater quality may be impacted in the event of a spillage of chemicals or hydrocarbon materials (e.g. oil spill from vehicles and machinery).

Environmental component	Activity	Potential Impact description
		Numerous pollution sources exist which have the potential to contaminate groundwater. The contamination of groundwater will occur during all phases of development and may continue long after closure.
Biodiversity	Clearing of indigenous vegetation	Loss of protected flora specimens due to clearing of areas for development, which includes protected (and endangered) species.
		Depletion of local floristic diversity and loss of rare species or flora communities.
		Disruption of important ecological processes, services, and infrastructure and altered ecological functionality (including fire, erosion) of surrounding areas and natural habitat.
		Deterioration and changes to untransformed habitat in the surrounds, with specific reference to sensitive habitat types and habitat types of limited representation on a local scale.
		The transformation of land increases the fragmentation of habitats and reduces the linkage role that this undeveloped land fulfils between different areas of biodiversity.
Sites of archaeological and cultural importance	No sites of archaeological and cultural importance have been identified that will be affected by the proposed SWMP.	
Sensitive landscapes	Establishment of water containment facilities (specific reference to PCD 3 and OMWSD Compartment 4.	Drainage lines are present in the area in which PCD 3 will be constructed. These drainage lines will be removed with affected water runoff from upstream diverted to PCD 3. Although this will reduce the surface water runoff quantity, the affected water will now be contained to comply with the provisions of GN.R 704. OMWSD Compartment 4 will be constructed within the current Attenuation Facility that was constructed to attenuate flood water from the upstream catchment. The Attenuation Facility was constructed by Venetia Mine (licenced activity) and has started to provided wetland ecosystem services.
Air quality	Construction of infrastructure associated with the SWMP	During the construction phase activities, dust (particulate matter, PM10 and PM2.5) may be generated that may have an impact on the ambient air quality of the area.
		All vehicles and mining machinery may have an impact on the air quality of the surrounding area as a result of the emissions released by the vehicles and machinery.
Noise	Increase in noise levels and disturbance	The development will be located in between and directly adjacent to existing mining infrastructure and current noise generating activities. The impact of noise during the construction should be absorbed by the existing noise impact to some extent. The proposed areas associated with the SWMP are located some distance from the closest receptors and hence the site clearance, construction phase and operational phase will have low impact in terms of noise pollution.
Visual	Construction and use of infrastructure associated with the SWMP	The development will be located in between and directly adjacent to existing mining infrastructure and hence the impact should be absorbed to the existing infrastructure to some extent. The proposed areas associated with the SWMP are located some distance from the closest receptors and hence the site clearance, construction phase and operational phase will have low visibility.
Socio-economic	Construction and use of infrastructure	Job security of the mine's current employees will continue, along with other benefits arising from the Social and Labour Plan, as the SWMP is

Environmental component	Activity	Potential Impact description
	associated with the SWMP	required to ensure Venetia Mine's compliance to GN.R 704 and Section 19 (Duty of care) of the NWA and to service the VUP.

8.6. Methodology used in determining and ranking potential environmental impacts and risks

8.6.1 Methodology to be applied during the EIAR / EMPr phase

The environmental risk of any aspect is determined by a combination of parameters associated with the impact. Each parameter connects the physical characteristics of an impact to a quantifiable value to rate the environmental risk.

Impact assessments should be conducted based on a methodology that includes the following:

- Clear processes for impact identification, predication and evaluation.
- Specification of the impact identification techniques.
- Criteria to evaluate the significance of impacts.
- Design of mitigation measures to lessen impacts.
- Definition of the different types of impacts (indirect, direct or cumulative).
- Specification of uncertainties.

After all impacts have been identified, the nature and scale of each impact can be predicted. The impact prediction will take into account physical, biological, socio-economic and cultural information and will then estimate the likely parameters and characteristics of the impacts. The impact prediction will aim to provide a basis from which the significance of each impact can be determined, and appropriate mitigation measures can be developed. The risk assessment methodology is based on defining and understanding the three basic components of the risk, i.e. the source of the risk, the pathway and the target that experiences the risk (receptor).

Table 8 and Table 10 below indicate the methodology to be used in order to assess the Probability and Magnitude of the impact, respectively, and provides the Risk Matrix that will be used to plot the Probability against the Magnitude in order to determine the Severity of the impact.

Table 8: Determination of Probability of impact

Score	Frequency of Aspect / Unwanted Event	Availability of Pathway from the source to the receptor	Availability of Receptor
1	Never known to have happened, but may happen	A pathway to allow for the impact to occur is never available	The receptor is never available
2	Known to happen in industry	A pathway to allow for the impact to occur is almost never available	The receptor is almost never available

Score	Frequency of Aspect / Unwanted Event	Availability of Pathway from the source to the receptor	Availability of Receptor
3	< once a year	A pathway to allow for the impact to occur is sometimes available	The receptor is sometimes available
4	Once per year to up to once per month	A pathway to allow for the impact to occur is almost always available	The receptor is almost always available
5	Once a month - Continuous	A pathway to allow for the impact to occur is always available	The receptor is always available

Step 1: Determine the PROBABILITY of the impact by calculating the average between the Frequency of the Aspect, the Availability of a pathway to the receptor and the availability of the receptor.

Table 9: Determination of Severity of impact

Environmental Impact Rating / Priority					
	MAGNITUDE				
Probability	1 Minor	2 Low	3 Medium	4 High	5 Major
5 Almost Certain	Low	Medium	High	High	High
4 Likely	Low	Medium	High	High	High
3 Possible	Low	Medium	Medium	High	High
2 Unlikely	Low	Low	Medium	Medium	High
1 Rare	Low	Low	Low	Medium	Medium

Step 3: Determine the SEVERITY of the impact by plotting the averages that were obtained above for Probability and Magnitude.

Table 10: Determination of Magnitude of impact

Score	Source					Receptor
	Duration of impact	Extent	Volume / Quantity / Intensity	Toxicity / Destruction Effect	Reversibility	Sensitivity of environmental component
1	Lasting days to a month	Effect limited to the site. (metres);	Very small quantities / volumes / intensity (e.g. < 50 ℓ or < 1 ha)	Non-toxic (e.g. water) / Very low potential to create damage or destruction to the environment	Bio-physical and/or social functions and/or processes will remain unaltered.	Current environmental component(s) are largely disturbed from the natural state.
2	Lasting 1 month to 1 year	Effect limited to the activity and its immediate surroundings. (tens of metres)	Small quantities / volumes / intensity (e.g. 50 ℓ to 210 ℓ or 1 ha to 5 ha)	Slightly toxic / Harmful (e.g. diluted brine) / Low potential to create damage or destruction to the environment	Bio-physical and/or social functions and/or processes might be negligibly altered or enhanced / Still reversible	Receptor of low significance / sensitivity
3	Lasting 1 – 5 years	Impacts on extended area beyond site boundary (hundreds of metres)	Moderate quantities / volumes / intensity (e.g. > 210 ℓ < 5000 ℓ or 5 – 8 ha)	Moderately toxic (e.g. slimes) Potential to create damage or destruction to the environment	Bio-physical and/or social functions and/or processes might be notably altered or enhanced / Partially reversible	Current environmental component(s) are moderately disturbed from the natural state.
4	Lasting 5 years to Life of Organisation	Impact on local scale / adjacent sites (km)	Very large quantities / volumes / intensity (e.g. 5000 ℓ – 10 000 ℓ or 8 ha– 12 ha)	Toxic (e.g. diesel & Sodium Hydroxide)	Bio-physical and/or social functions and/or processes might be considerably altered or enhanced / potentially irreversible	No environmentally sensitive components.
5	Beyond life of Organisation / Permanent impacts	Extends widely (nationally or globally)	Very large quantities / volumes / intensity (e.g. > 10 000 ℓ or > 12 ha)	Highly toxic (e.g. arsenic or TCE)	Bio-physical and/or social functions and/or processes might be severely/substantially altered or enhanced / Irreversible	Current environmental component(s) are a mix of disturbed and undisturbed areas.

Step 2: Determine the MAGNITUDE of the impact by calculating the average of the factors above.

8.6.2 Knowledge gaps, assumptions and limitations

Five specialist assessments are currently being undertaken to inform this Environmental Authorisation application. These included:

- Wetland Assessment and GN.R 509 Risk Assessment.
- Desktop Geohydrological Assessment.
- Phase 1 Heritage Impact Assessment.
- Biodiversity Impact Assessment (inclusive of fauna and flora).
- Hydrological Impact Assessment.

As the above-mentioned assessments were not yet finalised at the time of compiling this Draft Scoping Report, the baseline information provided in Section 8.4 was extracted from the draft reports of the above-mentioned assessments, the approved EMPr and previous studies undertaken for other projects at Venetia Mine. As a result, the baseline information is provided based on the assumption that no significant changes were made to the area in question prior to this project. The assumptions, gaps in knowledge and limitations identified in these specialist assessments will be detailed in the EIAR / EMPr.

8.7. Positive and negatives that the SWMP and alternatives will have on the environment and community affected

The positive and negative implication of the SWMP and the alternatives identified have been provided below and assessed in terms of the following four categories:

- Environmental.
- Technical/Engineering.
- Economical.
- Social.

The positive and negative impacts of both the proposed activities and the preliminary identified alternatives will be further assessed as part of the EIAR / EMPr.

Table 11: Advantage and disadvantages of the proposed activities and preliminary identified alternatives

Alternative	Advantages	Disadvantages
Capacity alternative for the proposed facilities of the SWMP		
PCD 1		
PCD 1A	**Environmental:** None identified. **Technical/Engineer:** The 2015 design catered for a storage capacity of 60 000 m^3. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** Greater relative cost per unit volume of storage. **Social:** None identified.

Alternative	Advantages	Disadvantages
	continue to generate income, thus jobs will be retained.	
PCD 1B (preferred)	**Environmental:** None identified. **Technical/Engineer:** The wall height will be increased to approximately 8 m. By making use of the natural topography, an inward sloping basin mimicking the natural topography has been adopted; which reduces the volume of cut required. This design yields double the storage capacity, i.e. 120 000 m^3. **Economical:** Lower relative cost per unit volume of storage. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** None identified. **Social:** None identified.
PCD 2 (preferred)	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** PCD2 is constrained by the existing CRD's existing footprint to the south-west and by the future extension of the CRD dump to the west. **Economical:** High earthworks cost per unit volume of storage. **Social:** None identified.
PCD 3A	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** Low relative cost per unit volume of storage. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** Area located on relatively undisturbed area that constitutes indigenous vegetation. **Technical/Engineer:** Extensive earthworks (with significant hardrock excavation) will be required due to the site's topography not being ideal for a dam site. **Economical:** High earthworks cost. **Social:** None identified.
PCD 3B	**Environmental:** None identified. **Technical/Engineer:** Estimated maximum storage capacity of 750 000 m^3. This dam location has the advantage that the natural topography (between two 'koppies') can be utilised for the construction of the dam, resulting in reduced earthworks than for PCD3A. **Economical:** Low relative cost per unit volume of storage. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to	**Environmental:** Area located on relatively undisturbed area that constitutes indigenous vegetation. **Technical/Engineer:** Extensive earthworks (with significant hardrock excavation) will be required due to the site's topography not being ideal for a dam site. . Increasing the wall height above 12 m will increase the classification of the dam to a 'medium-sized' facility that, depending on the hazard rating, may result in the dam being classified as a Category III dam. Furthermore, raising the dam level further would also result in the upstream extent of the facility encroaching into the future CRD's Life of Mine ("LoM") footprint. **Economical:** High earthworks cost.

Alternative	Advantages	Disadvantages
	continue to generate income, thus jobs will be retained.	**Social:** None identified
PCD 3C (preferred)	**Environmental:** None identified. **Technical/Engineer:** Estimated storage capacity of 1 050 000 m^3. The liner area is 33% larger than PCD 3B, however, it will have just over 50% more storage capacity. **Economical:** Low relative cost per unit volume of storage. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** Area located on relatively undisturbed area that constitutes indigenous vegetation. The embankment position is restricted on the western side by the 100-year floodline of the Kolope River **Technical/Engineer:** Extensive earthworks (with significant hardrock excavation) will be required due to the site's topography not being ideal for a dam site. **Economical:** High earthworks cost. **Social:** None identified.
PCD 3D	**Environmental:** None identified. **Technical/Engineer:** **D**am encroaches on the envisaged footprint of the future CRD extension. PCD3D will have an estimated storage capacity is 750 000 m^3. A number of layouts were considered for this dam, but due to the relatively wide, open valley on the western edge of the dam and the presence of higher ground on the eastern side the layout presented here proved to be the most favourable for this option. **Economical:** Low relative cost per unit volume of storage. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** Area located on relatively undisturbed area that constitutes indigenous vegetation. **Technical/Engineer:** Extensive earthworks will be required to build a U-shaped dam embankment. The dam encroaches on the envisaged footprint of the future CRD extension. **Economical:** High earthworks cost. **Social:** None identified
PCD 1 Compartment 4B (Preferred)	**Environmental:** None identified. **Technical/Engineer:** The dam was designed with a storage capacity of 30 000 m^3. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** extensive earthworks will be required resulting in an approximate 1:1 earthworks volume to storage volume ratio. **Economical:** Greater relative cost per unit volume of storage. **Social:** None identified.
ONWSD Compartment 3 (Preferred)	**Environmental:** None identified. **Technical/Engineer:** Favourable in terms of topography due to the natural valley in which it is positioned. The site is therefore considered economical in terms of its earthworks volumes.	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** High relative cost per unit volume of storage**.** **Social:** None identified.

Alternative	Advantages	Disadvantages
	Economical: The site is considered economical in terms of its earthworks volumes. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	
ONWSD Compartment 4 (Preferred)	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** Earthworks will require 107 000m^3 of excavation to establish a suitable dam basin and remove silt transported to low-lying area in previous flood events. **Economical:** High relative cost per unit volume of storage. **Social:** None identified.
ONWSD North and South Compartment – expansion (Preferred)	**Environmental:** None identified. **Technical/Engineer:** Raising dam wall by 2 m will result in increase in capacity of 200 000 m^3. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** High relative cost per unit volume of storage. **Social:** None identified.
FRD 1 RWD – expansion (raising by 1.5 m)	**Environmental:** None identified. **Technical/Engineer:** Raising the wall height by 1.5 m will increase the capacity of the FRD1 RWD by approximately 60 000 m^3, to a total storage volume of 90 000 m^3. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** High relative cost per unit volume of storage. **Social:** None identified.
FRD 1 RWD – expansion (raising by 3 m) (Preferred)	**Environmental:** None identified. **Technical/Engineer:** A 3.0 m raise of the embankment, increases the storage capacity of the current facility by an estimated 140 000 m^3 to a total storage capacity of 170 000 m^3. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to	**Environmental:** None identified. **Technical/Engineer:** None identified. **Economical:** High relative cost per unit volume of storage. **Social:** None identified.

Alternative	Advantages	Disadvantages
	continue to generate income, thus jobs will be retained.	
FRD 1 RWD - Alternative site (Preferred)	**Environmental:** None identified. **Technical/Engineer:** Existing FRD1 RWD can remain operational throughout the period. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** The proposed site for this dam slopes relatively steeply from east to west. As a result, a significant amount of earthworks (fill) will be required to construct the dam embankment. **Economical:** High relative cost per unit volume of storage. **Social:** None identified.
K03 Pit (Preferred)	**Environmental:** None identified. **Technical/Engineer**: Total in-pit storage capacity of 3.5 million m^3. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained.	**Environmental:** None identified. **Technical/Engineer:** None identified **Economical:** None identified **Social:** None identified.
Discharge (Preferred)	**Environmental:** None identified. **Technical/Engineer**: An average annual discharge of 46 000 m^3. A total annual discharge during a 1:50 year flood event of 790 000 m^3. **Economical:** None identified. **Social:** Continued contribution to the socio-economy in the area due to greater security of the VUP. The SWMP will ensure that Venetia Mine is able to continue to generate income, thus jobs will be retained	**Environmental:** Potential downstream water quality deterioration. **Technical/Engineer:** None identified **Economical:** None identified **Social:** None identified

9. Plan of study for the Environmental Impact Assessment Process

9.1. Description of alternatives

Refer to sections 8.1 and 8.7 above for a description of the alternatives that have been identified.

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

As part of the proposed SWMP, the following aspects of the environment will be considered and include:

- Geology.

- Topography.
- Soil, Land use and land capability.
- Fauna and Flora.
- Surface water.
- Groundwater.
- Sensitive landscapes (including wetlands).
- Air quality.
- Noise.
- Visual aspects.
- Sites of cultural and archaeological importance.
- Socio-economic aspects.

9.3. Description of aspects to be assessed by specialists

The following specialist studies were identified:

- Biodiversity Assessment (fauna and flora).
- Wetland Assessment and GN.R 509 risk assessment.
- Hydrological Impact Assessment.
- Desktop Geohydrological Impact Assessment.
- Phase 1 Heritage Impact Assessment.

9.4. Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

9.4.1 Proposed method of assessing environmental aspects

The method for assessing the environmental aspects have been described in Section 8.6.2 above.

9.4.2 Proposed method of assessing alternatives

Refer to Sections 8.1 and 8.7 above for the description of alternatives identified and for the advantages and disadvantages of the identified alternatives.

9.5. The proposed method of assessing duration and significance

Refer to Section 8.6 above for the methodology used in determining and ranking potential environmental impacts and risks.

9.6. The stages at which the Competent Authority will be consulted

The Competent Authority, in this case the Limpopo Department of Mineral Resources and Energy (“DMRE”) will be consulted throughout the application process.

This Scoping Report is compiled and will be made available for public and stakeholder review for a period of thirty (30) days. This Scoping Report will be submitted to the DMRE, where after the DMRE

will have 44 days to either refuse environmental authorisation or accept the Scoping Report and inform the applicant to proceed with the tasks contemplated in the plan of study for the EIA.

The Competent Authority (the DMRE) will further be involved during the EIA phase of the SWMP. The EIAR / EMPr will also be made available for a public and stakeholder review period of thirty (30) days. Upon completion of the review period, the EIAR / EMPr will be finalised and submitted to the DMRE, where after the DMRE will have a period of 107 days to consider the application and, in writing, notify the applicant of the decision to grant or refuse environmental authorisation.

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

9.7.1 Steps to be taken to notify interested and affected parties

A detailed public participation process was undertaken as part of the initial application- and scoping phase for the SWMP. The following has been conducted as part of the Environmental Authorisation Application (proof hereof is included in the Public Participation Report attached as Annexure D to this report):

- Advertisements:
  - A Newspaper advertisement was placed in the local newspaper on the 30 June 2021.
- Site notices:
  - Five (5) site notices were placed around the project site as well as at the existing mine.
- Written notices:
  - Written notices (including BIDs) were distributed to Interested and Affected Parties (I&APs).
- Availability of Scoping Report for public review:
  - This Scoping Report was made available for public and stakeholder review for a period of 30 days (from 30 June to 30 July2021). Notices providing the detail of the public viewing station and review period, were sent to registered I&APs via e-mail. This notification also formed part of the above-mentioned advertisement and site notices.

9.8. Description of the tasks that will be undertaken as part of the environmental impact assessment process

The Environmental Impact Assessment Report (“EIAR”) and Environmental Management Programme Report (“EMPr”) will be submitted, once the Scoping Report has been accepted by the Competent Authority. The EIAR will be compiled in accordance with Appendix 3 of the EIA Regulations 2014, as amended and the EMPr will be compiled in accordance with Appendix 4 of the EIA Regulations 2014, as amended.

9.9. Measures to avoid, reverse, mitigate, or manage identified impacts

Table 12 below is the risk assessment table in which preliminarily identified impacts have been identified. Mitigations measures (to avoid, reverse, mitigate, or manage identified impacts) as well as the extent to which these impacts are anticipated to result in residual risks are also provided in Table 12 below.

Table 12: Risk assessment table for the proposed SWMP including alternatives

Environmental component	Activity	Potential Impact description	Mitigation type Modify/ Remedy/ Control/Stop	Potential for residual risk
Geology	No impact to geology will occur as a result of the proposed SWMP.			
Topography	Alteration of the natural drainage patterns	The construction and expansion of the facilities associated with the SWMP will influence the nature of the topography that is typical of the surrounding area with such changes stemming from the dam walls. The natural drainage patterns, with specific focus on PCD 3, will also be altered as PCD 3 will be constructed to contain affected water from runoff from site.	Control: Disturbance to the natural topography should be limited to the construction footprint areas only.	Low: There is a low potential for residual impact on topography as the proposed facilities will be removed during the closure and rehabilitation phase of the mine.
Soil, land use and land capability	Clearing of soil	The removal of topsoil may result in the mixing of the horizons of the soil that will have an impact on the fertility and production potential of the soil.	Control: Soil must be stripped and stockpiled for future rehabilitation purposes. Additional related mitigation measures include pollution prevention and limiting site clearance to designated footprint areas. Contain spillage; excavated and dispose soil if required. Utilisation of spill kits and/or excavation of affected soil with subsequent disposal at a licensed disposal site. Effective storm water management controls during construction, to minimise runoff, erosion and sedimentation. Storm water channels should have necessary energy dissipators to slow the water flow and limit erosion.	Low: There is a low potential for residual impact on soil, land use and land capability as the proposed facilities will be removed during the closure and rehabilitation phase of the mine.
		The temporary stockpiling of topsoil may result in a decrease in the fertility of the soil and the leaching of minerals due to exposure of the soil to elements.		
		A loss of microbes and viable seed may occur as a result of the temporary stockpiling of topsoil.		
		Soil compaction and topsoil loss through erosion may occur as a result of construction related activities (including the temporary stockpiling). This will further lead to a loss of soil fertility.		
		Ineffective erosion control along access roads may lead to siltation of downstream water resources and scouring of soil.		

Environmental component	Activity	Potential Impact description	Mitigation type Modify/ Remedy/ Control/Stop	Potential for residual risk
Surface water	Surface water contamination and alteration of natural drainage patterns	In the event of chemical or hydrocarbon spillages on soil, surface water runoff that comes into contact with the soil may become contaminated and enter the receiving environment and / or water resources. This will have an impact on surface water quality.	Control: Disturbed areas to be minimised to the direct project footprint areas only. This will minimise the amount of run-off generated and the likelihood of the runoff containment infrastructure failing. Minor spills will be rectified by excavating and disposing of the soil in an appropriate manner.	Low. If mitigated / managed appropriately.
		Surface water contamination may occur should the separation of clean- and dirty water management areas not be effectively implemented.	Modify: The SWMP is to ensure the containment of water removed from underground as well as affected surface water runoff.	
		Dam failure may result in affected water enter the receiving environment and / or water resources. This will have an impact on surface water quality.	Control: Operate the proposed facilities within their operating capacities and applicable free-bords	Low. If mitigated / managed appropriately.
Groundwater	Groundwater contamination	Potential seepage of water to the groundwater regime may contaminate groundwater resources.	Control: Monitoring boreholes will be used to ensure the extent of deterioration of groundwater is monitored post closure. Infrastructure design should be altered to minimise seepage where possible utilizing impermeable catchments to minimise infiltration and related seepage.	Low. If mitigated / managed appropriately, and to prevent/minimise oil/lubricant spillages.
		Groundwater quality may be impacted in the event of a spillage of chemicals or hydrocarbon materials (e.g. oil spill from vehicles and machinery). Numerous pollution sources exist which have the potential to contaminate groundwater. The contamination of groundwater will occur during all phases of development and may continue long after closure.	Modify and control: Maintenance of operating machines and vehicles only to take place in designated areas regularly. Approved environmentally friendly chemicals should be used as far as possible. All hydrocarbons must be stored in bunded areas. Spillages should be cleaned up and discarded correctly immediately after such an event occurs.	Low. If mitigated / managed appropriately.

Environmental component	Activity	Potential Impact description	Mitigation type Modify/ Remedy/ Control/Stop	Potential for residual risk
			Contractor induction should include environmental awareness and the correct action to take in the event of a hydrocarbon spill.	
Biodiversity	Clearing of indigenous vegetation	Loss of protected flora specimens due to clearing of areas for development, which includes protected (and endangered) species.	Control and / or stop: Mitigation measures include limiting the footprint area, restricting the footprint area to areas of lower sensitivity and adherence to DFFE permit guidelines.	Medium. The removal of natural vegetation is regarded as a significant impact. However, the mine conducts rehabilitation on affected areas according to legislative and company requirements along with ongoing programmes for the control of alien invasive species, hence a residual impact on vegetation may be prevented
		Depletion of local floristic diversity and loss of rare species or flora communities.		
		Disruption of important ecological processes, services, and infrastructure and altered ecological functionality (including fire, erosion) of surrounding areas and natural habitat.		
		Deterioration and changes to untransformed habitat in the surrounds, with specific reference to sensitive habitat types and habitat types of limited representation on a local scale.		
		The transformation of land increases the fragmentation of habitats and reduces the linkage role that this undeveloped land fulfils between different areas of biodiversity.		
Sites of archaeological and cultural importance	No sites of archaeological and cultural importance have been identified that will be affected by the proposed SWMP.			
Sensitive landscapes	Establishment of water containment facilities (specific reference to PCD	Drainage lines are present in the area in which PCD 3 will be constructed. These drainage lines will be removed with affected water runoff from upstream diverted to PCD 3. Although this will	Control: Wetlands should be demarcated to prevent unnecessary impact and loss of this habitat.	Medium to low. If mitigated / managed appropriately.

Environmental component	Activity	Potential Impact description	Mitigation type Modify/ Remedy/ Control/Stop	Potential for residual risk
	3 and OMWSD Compartment 4.	reduce the surface water runoff quantity, the affected water will now be contained to comply with the provisions of GN.R 704. OMWSD Compartment 4 will be constructed within the current Attenuation facility that was constructed to attenuate flood water from the upstream catchment. The Attenuation Facility was constructed by Venetia Mine (licenced activity) and has started to provided wetland ecosystem services.		
Air quality	Construction of infrastructure associated with the SWMP	During the construction phase activities, dust (particulate matter, PM10 and PM2.5) may be generated that may have an impact on the ambient air quality of the area. All vehicles and mining machinery may have an impact on the air quality of the surrounding area as a result of the emissions released by the vehicles and machinery.	Control: Dust management to be done on all cleared areas and the unpaved roads. Construction equipment to be serviced at regular intervals.	Low. Low levels of dust will continue to be generated after construction as the proposed infrastructure will be operational. Impacts on sensitive receptors will continue to be monitored as is required by the mine's AEL.
Noise	Increase in noise levels and disturbance	The development will be located in between and directly adjacent to existing mining infrastructure and current noise generating activities. The impact of noise during the construction should be absorbed by the existing noise impact to some extent. The proposed areas associated with the SWMP are located some distance from the closest receptors and hence the site clearance, construction phase and operational phase will have low impact in terms of noise pollution.	Control: Noise pollution is to be monitored as part of the mine's monitoring requirements and construction activities are to be kept to normal daylight hours.	Low. Elevated noise levels caused by the construction activities will deplete; however, noise monitoring will continue to be conducted annually as part of the mine's existing EMPr commitments.

Environmental component	Activity	Potential Impact description	Mitigation type Modify/ Remedy/ Control/Stop	Potential for residual risk
Visual	Construction and use of infrastructure associated with the SWMP	The development will be located in between and directly adjacent to existing mining infrastructure and hence the impact should be absorbed to the existing infrastructure to some extent. The proposed areas associated with the SWMP are located some distance from the closest receptors and hence the site clearance, construction phase and operational phase will have low visibility.	Control and modify: All disturbed areas outside of the direct footprint of the infrastructure are to be rehabilitated.	Low. If rehabilitation is not implemented adequately, a residual visual impact may occur however risk is low as Venetia Mine has legislative and company commitments to rehabilitate.
Socio-economic	Construction and use of infrastructure associated with the SWMP	Job security of the mine's current employees will continue, along with other benefits arising from the Social and Labour Plan, as the SWMP is required to ensure Venetia Mine's compliance to GN.R 704 and to service the VUP.	Control: If possible, goods and services should be procured from local small businesses; this will stimulate indirect job creation. Knowledge sharing and on-the-job training should be viewed as a prerequisite, where feasible, for all contractor's/service providers working on the project and employing local labour. Continued inclusion of skills development programmes in the mine's Social and Labour Plan ("SLP").	Low. Job security will not continue after the mine has closed however these risks would be mitigated through the mine's closure plans.

10. Other information required by the Competent Authority

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

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

Table 13: Impact on the socio-economic conditions of any directly affected person

Results of investigation, assessment and evaluation of impact on any directly affected person	Reference to where mitigation is reflected
Venetia Mine indicates that it strives to maintain a positive impact on the socio-economic environment during the life of mine. Venetia Mine has developed and implemented a Social and Labour Plan ("SLP") that indicates that it is actively involved in the community whereby funds are made available for the development of local infrastructure and social upliftment.	Section 8.5

10.1.2 Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act 25 of 1999.

Table 14: Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act 25 of 1999.

Results of investigation, assessment and evaluation of impact on any national estate	Reference to where mitigation is reflected
No impact on national estate (heritage resources) in terms of the Heritage Resources Act (Act 25 of 1999), is identified as part of the SWMP.	Refer to Chapter K of Section 8.4.1.

11. Other matters required in terms of section 24(4)(a) and (b) of the Act

No additional matters in terms of section 24(4)(a) and (b) have been identified.

12. 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 EAP

29 June 2021

Date

13. Declaration of independence

Shangoni hereby declares that it is an independent EAP has no business, financial, personal or other interest in this project in respect of which Shangoni is appointed. Furthermore, no circumstances exist that may compromise the objectivity of Shangoni, excluding fair remuneration for work performed in connection with this project.

Report compiled by:	**DRAFT FOR PUBLIC REVIEW**	**Report reviewed by:**	**DRAFT FOR PUBLIC REVIEW**
	Ashley Miller		**Brian Hayes (Pr Eng)**

Annexure A

Layout plans

Annexure B

Project Team Expertise

SHANGONI Management Services (Pty) Ltd

Stewards Problem Solvers Team Players

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Curriculum Vitae for Ashley Miller

Overview and Profile

Ashley obtained his B.Sc (Honours) degree in Environmental Analysis and Management through the University of Pretoria. Ashley is part of the Environmental Authorisations Department at Shangoni Management Services (Pty) Ltd. and has experience in drafting Basic Assessment Reports, Scoping Reports, Environmental Impact Assessments (EIA), Environmental Management Programme Reports (EMPr), Integrated Water and Waste Management Plans (IWWMP) and Integrated Water Use Licence Applications (IWULA). Ashley is also the Product Lead of Environmental Assurance and has the following experience in auditing: Due diligence audits, External Water Use Licence audits, Environmental Authorisation audits, Environmental Management Programme audits, Waste Management Licence audits and Atmospheric Emissions Licence audits. Ashley has also gained valuable experience in Geographic Information Systems (GIS) in compiling regional, locality and infrastructure maps and mine plans.

Education and Skills

BSc Hons. Environmental Analysis and Management – University of Pretoria	2011
BSc Geography – University of Pretoria	2010

Work and Project Experience

Company: Shangoni Management Services

Position: Principal Environmental Consultant

Years with company: 6 Years

Experience in field: 8 Years

Key responsibilities:

Environmental Authorisation-, Waste Management Licence- and Water Use Licence Applications. Services include:

- Communication with client and Government Authorities.
- Project responsibility and co-ordination.
- Authorisation application and report compilation.
- Public Participation.
- Basic Assessment Reports, Scoping Reports, Environmental Impact Assessment Reports (EIARs), Environmental Management Programme Reports (EMPrs) in terms of the National Environmental Management Act (NEMA), 1998, the National Environmental Management Waste Act (NEMWA), 2008, the Mineral and Petroleum Resources Development Act (MPRDA), 2002 and associated Regulations.
- Technical reports in support of Integrated Water Use Licence Applications (IWULAs) and Integrated Water and Waste Management Plans (IWWMPs) in terms of the National Water Act (NWA), 1998.

Clients:

- Msobo Coal: Verkeerdepan Mine (2012 & 2013)
- Stuart Coal: East Colliery (2012 & 2013)
- Petra Diamonds: Kimberley Underground Mines – Joint Venture (2012 & 2013)
- De Beers: Kimberley Mines (2012 & 2013)
- Sasol Mining (Pty) Ltd: Impumelelo Mine (2013 & 2014)
- Ngululu Resources (2014 & 2015)
- Ecca Holdings (Pty) Ltd.: Cape Bentonite Mine (2014, 2015 and 2016)
- China African Precious Metals (Pty) Ltd.: Orkney Gold Mine (2015 & 2016)
- Glencore: Kroondal, Rietvlei and Waterval Mines (2015 & 2016)
- Anglo Operations Pty Ltd: New Vaal Colliery (2016)
- Anglo Operations Pty Ltd: Greenside Colliery (2015)
- Petra Diamonds: Finsch Diamond Mine (2018)
- Anglo Operations Pty Ltd: Isibonelo Colliery (2019)
- Kimberley Ekapa Mining – Joint Venture (2018, 2019 and 2020)
- Stuart Coal: East and Weltevreden Colliery (2012 & 2013)
- Sasol Mining (Pty) Ltd: Impumelelo Mine (2013 & 2014)
- Stuart Coal: South Block Colliery (2012 & 2013)
- Anglo Operations Pty Ltd: Kleinkopje Colliery (2013 & 2014)
- Canyon Coal: Hakhano Colliery (2017)
- Seriti Coal: Kriel Colliery (2018)
- Afrisam: Ulco Operation (2019)
- Anglo Operations Pty Ltd: Isibonelo Colliery (2019)

- Anglo Operations Pty Ltd: Goedehoop Colliery (2018)
- Kimberley Ekapa Mining Joint Venture (2019)
- Anglo Coal: Rapid Loading Terminal (2019)

Key responsibilities:

Auditing. Services include:

- Environmental Management Programme (EMP) Performance Assessments and Legal Compliance Assessments.
- Environmental Authorisation- and Water Use Licence Compliance Audits.

Clients:

- Stuart Coal East Colliery (2014)
- Stuart Coal South Colliery (2014)
- Stuart Coal Weltevreden Colliery (2014)
- Sibanye Gold Burnstone Gold Mine (2015)
- Anglo Inyosi Coal: Zibulo Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Khwezela Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Mafube Colliery (2015 – 2019)
- Seriti Resources: New Denmark Colliery (2015 – 2019)
- Seriti Resources: New Vaal Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Greenside Colliery (2015 – 2019)
- Seriti Resources: Kriel Colliery (2015 – 2019)
- Glencore: Kroondal Mine (2016)
- Glencore: Waterval Mine (2016)
- Glencore: Rietvly Mine (2016)
- Sishen Iron Ore: Sishen Iron Ore Mine (2017 & 2019)
- HCI Coal: Mbali Colliery (2018)
- HCI Coal: Palesa Colliery (2018, 2019 and 2020)
- Glencore Alloys Carbon Division Middelburg operation (2012)
- Stuart Coal Weltevreden and East Colliery (2012 & 2013)
- Agrisuperior warehouse (2013)
- Glencore Alloys Carbon Division eMalahleni operations (2014)
- Glencore Alloys Carbon Division Middelburg operation (2014)
- Anglo Inyosi Coal: Zibulo Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Khwezela Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Mafube Colliery (2015 – 2019)
- Seriti Resources: New Denmark Colliery (2015 – 2019)
- Seriti Resources: New Vaal Colliery (2015 – 2019)

- Anglo Operations Proprietary Limited: Greenside Colliery (2015 – 2019)
- Seriti Resources: Kriel Colliery (2015 – 2019)
- Kumba Iron Ore: Thabazimbi Iron Ore Mine (2016)
- Sishen Iron Ore: Sishen Iron Ore Mine (2017 & 2019)
- HCI Coal: Mbali Colliery (2018)
- HCI Coal: Palesa Colliery (2018, 2019 and 2020)

International projects:

Environmental authorisation application for a large scale opencast coal mine and Environmental authorisation application for a 300 MW coal fired power station. Services include:

- Overall project management.
- Management of Tanzanian Consultants.
- Management Tanzanian specialists.
- Management of South African specialists.
- On-going communication with client, consultants and specialists.
- On-going Tanzanian legislation review.
- Authorisation application and report compilation (Scoping Reports and Environmental Impact Assessment Reports).
- Project budgeting and administration.

Clients:

- Tanzania - Kibo Mining PLC: Mbeya Coal to Power Project (2016)

Declaration of Content

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.

Date: 21 May 2021

Ashley Miller

SHANGONI Management Services (Pty) Ltd

Stewards | Problem Solvers | Team Players

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Curriculum Vitae for Brian Hayes

Overview and Profile

Brian has for the past 29 years been actively involved in environmental management and engineering primarily in the mining, FMCH and petrochemical industries. A registered professional engineer (Chemical) with a master's degree in environmental engineering, Brian is responsible for quality assurance within the environmental department whilst also actively involved in consulting to clients on aspects and projects related to environmental assurance.

Education and Skills

Leadership Development Program – SA Breweries	1999
M.Sc. Environmental Engineering (Cum Laude) – University of Nottingham, UK	1997
B Eng Chemical – University of Stellenbosch	1992

Professional Affiliations

Registered as Professional Engineer with the Engineering Council of South Africa (ECSA).

Work and Project Experience

Company: Shangoni Management Services

Position: Technical and quality assurance

Years with company: 21 Years

Experience in field: 29 Years

Key responsibilities:

Environmental Authorisation-, Waste Management Licence-, Water Use Licence-, Air Emission Licence Applications. Services include:

- Support project teams for Environmental Impact Assessment, Water Use License, Waste License and Atmospheric Emission License applications. Main duties include legal support, technical review/support and key meetings with clients and relevant authorities (e.g. DWS and DMR).

Water Management. Services include:

- Support our technical specialists on surface water and groundwater management, including hydrology, geohydrology, water quality and water demand management.

Air Quality Management. Services include:

- Support our technical team on air emission inventories, air dispersion modelling, air quality impact assessments and management plans.

Trained as Clean Development Mechanism ("CDM") lead auditor by PriceWaterhouseCoopers (SA). Involved in validation/verification projects (for PwC and ERM CVS) as lead/technical expert. Services include:

- Biogas to Energy Project (SA)
- Biogas flaring (SA)
- Methane Capture and Electricity Generation (SA)
- Commercial Solar Heating (SA)
- Energy Efficiency (SA)
- Municipal waste composting (Sudan)
- Municipal waste flaring (Sudan; SA)
- Cogeneration with Waste Smelter Gas (SA)
- Gas flaring of associated gas (Nigeria)

SHE Management Systems. Services include:

- Managed team of 10 consultants for implementing OHSAS 18001 and ISO 14001 within Shell Nigeria (5-year project). Operations as covered include flow stations, pipeline operations, near shore, off shore and swamp oil rig operations.

Environmental Legal Compliance. Services include:

- Acting as technical lead to environmental legal assurance projects for the mining and industrial sectors.

Environmental Legal Training. Services include:

- Facilitate Environmental Legal training courses for mining and industrial sectors, also lecturer (part-time) at University of Pretoria: Mining Faculty.

Declaration of Content

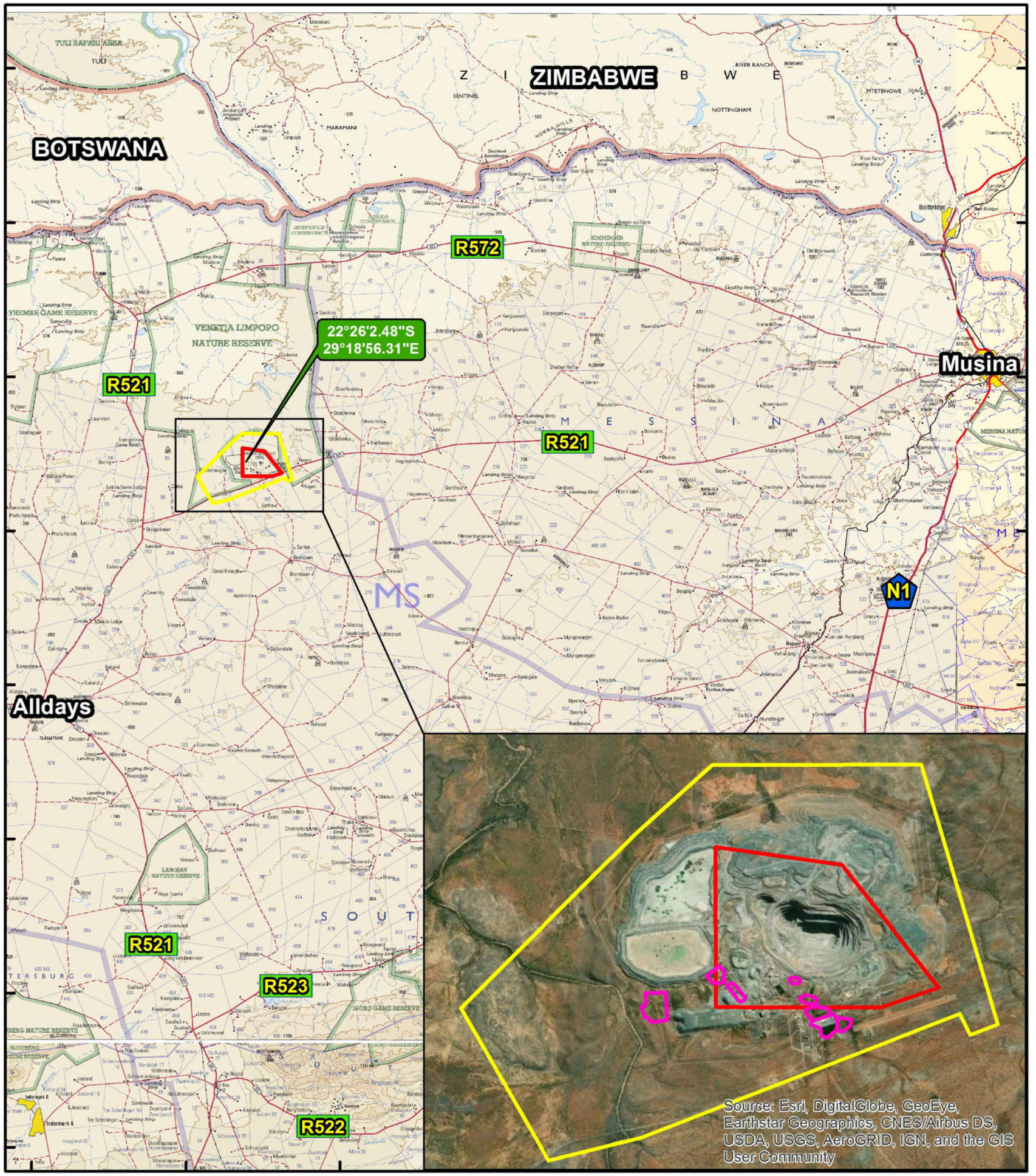
I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.

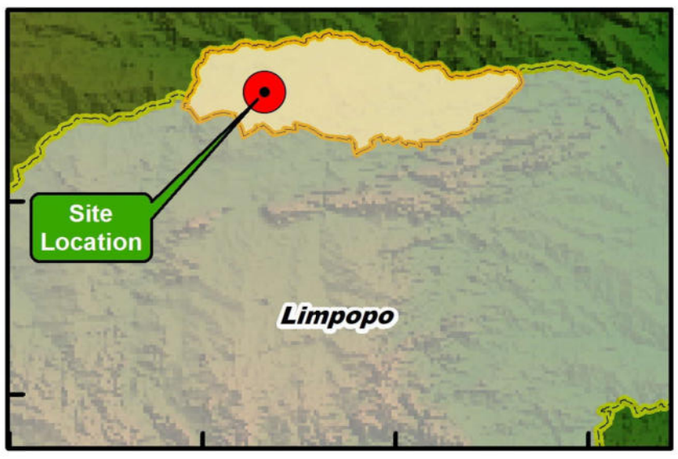
Date: 21 May 2021

Brian Hayes

Pr.Eng

De Beers: Venetia Mine - Regional Loclity Map





Legend

- 58 MR
- Proclaimed Mining Area
- Proposed Facilities (SWMP)
- Musina Local Municipality
- Limpopo Province

N

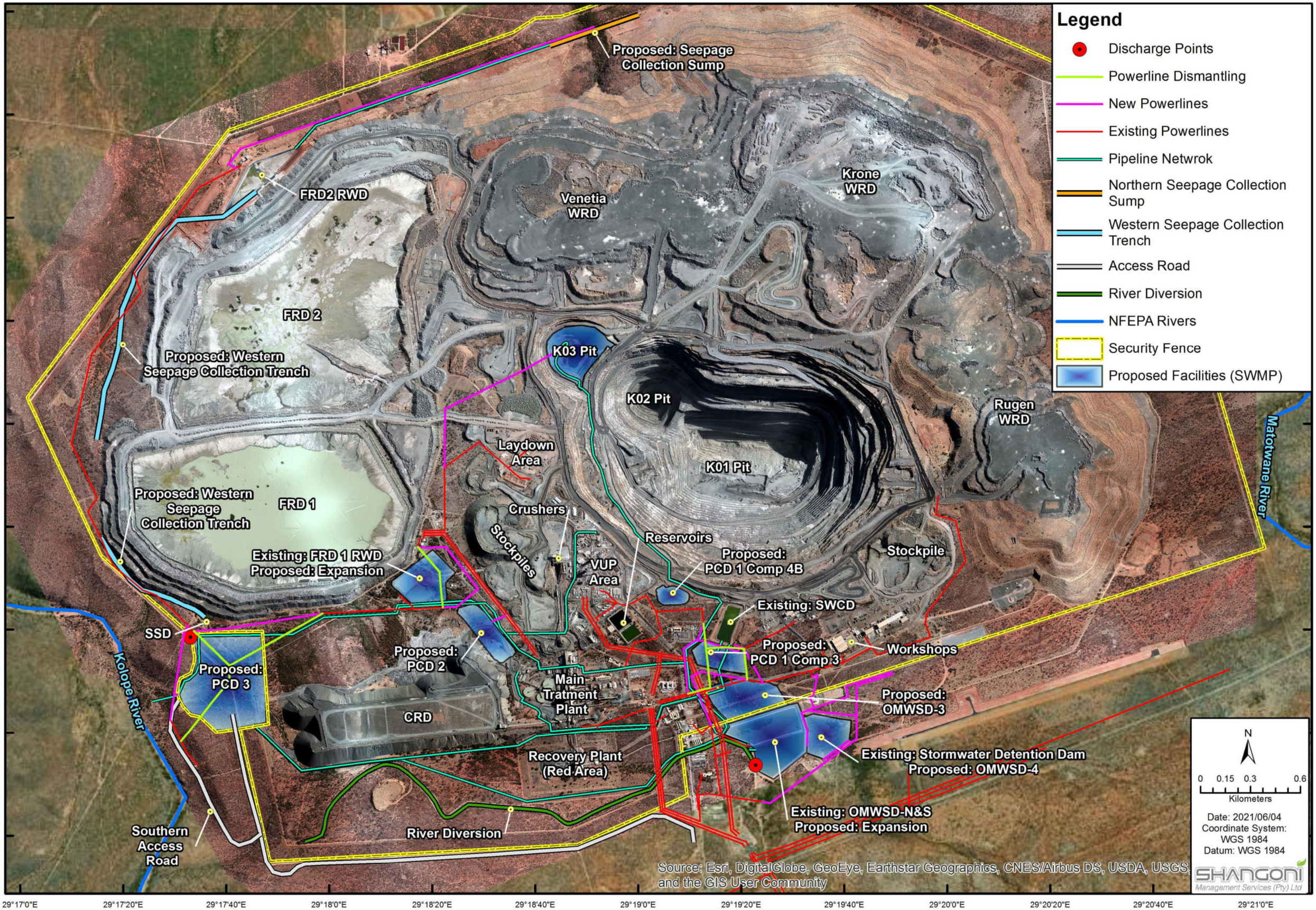
0 4.75 9.5 19

Kilometers

Date: 2021/04/21
Coordinate System: WGS 1984
Datum: WGS 1984

SHANGONI Management Services (Pty) Ltd

De Beers: Venetia Mine - Master Layout Plan



Legend

- Discharge Points
- Powerline Dismantling
- New Powerlines
- Existing Powerlines
- Pipeline Netwrok
- Northern Seepage Collection Sump
- Western Seepage Collection Trench
- Access Road
- River Diversion
- NFEPA Rivers
- Security Fence
- Proposed Facilities (SWMP)

N

0 0.15 0.3 0.6
Kilometers

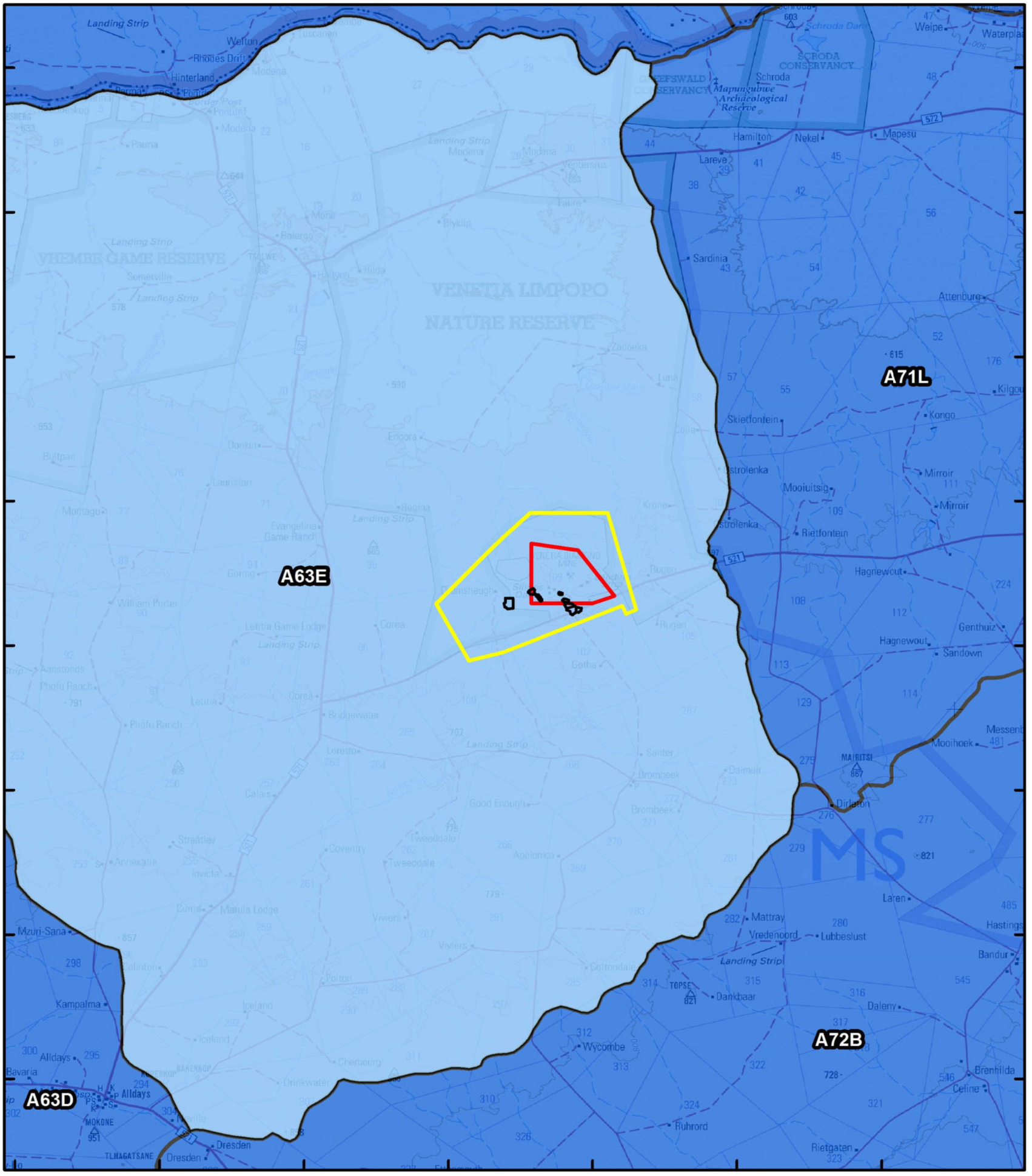
Date: 2021/06/04
Coordinate System: WGS 1984
Datum: WGS 1984

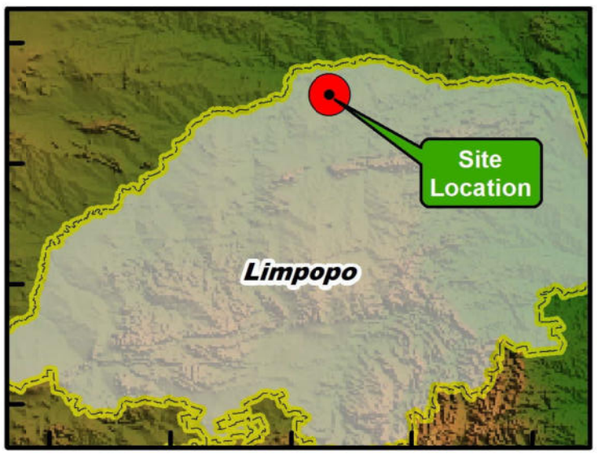
SHANGONI Management Services (Pty) Ltd

22°24'40"S
22°25'0"S
22°25'20"S
22°25'40"S
22°26'0"S
22°26'20"S
22°26'40"S
22°27'0"S
22°27'20"S

29°17'0"E
29°17'20"E
29°17'40"E
29°18'0"E
29°18'20"E
29°18'40"E
29°19'0"E
29°19'20"E
29°19'40"E
29°20'0"E
29°20'20"E
29°20'40"E
29°21'0"E

De Beers: Venetia Mine - Quaternary Catchments Map





Legend

- 58 MR
- Proclaimed Mining Area
- Proposed Facilities (SWMP)
- Affected Catchments
- Quaternary Catchments

N

0 2.25 4.5 9

Kilometers

Date: 2021/04/21
Coordinate System: WGS 1984
Datum: WGS 1984

SHANGONI Management Services (Pty) Ltd

Annexure C

Competent authority correspondence

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

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

IMPORTANT NOTICE

Kindly note that:

1. As from 8 December 2014, this document serves as the application form, and incorporates the requisite documents that are to be submitted together with the application for the necessary environmental authorisations in terms of the said Acts.

2. This application form is applicable while the Mineral and Petroleum Resources Development Amendment Act of 2008 is in effect, as the form may require amendment should the Act be further amended.

3. Applicants are required to apply for the necessary water use licence and any other authorisations nor licences to the relevant competent authorities as required by the relevant legislation. Upon acceptance of an application for a right or permit in terms of the MPRDA, applicants will be required to provide evidence to the Regional Manager that a water use licence has been applied for.

4. The Regional Manager will respond to the application and provide the reference and correspondence details of the Competent Authority, and in the event that the application for a right or permit is accepted, together with the date by which the relevant environmental reports must be submitted. Notwithstanding anything that may appear to be stated to the contrary in the acceptance letter, the timeframes apit

5. re in fact aligned and the prescribed timeframes for the submission of documents as regulated by the NEMA regulations must be strictly adhered to.

6. The application must be typed within the spaces provided in the form. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. Spaces are provided in tabular format and will extend automatically when each space is filled with typing.

7. The failure to submit complete information as required in this application form may result in the refusal of the application for an environmental authorisation and consequently of the right or permit applied for.

8. This application must be submitted through the SAMRAD online application system of the Department of Mineral Resources under “Other documents to upload”.

9. Unless protected by law, all information filled in on this application form will become public information on receipt by the competent authority. Any interested and affected party should and shall be provided with the information contained in this application on request, during any stage of the application process.

10. Please note that an application fee is payable in terms of the National Environmental Management Act and the National Waste Management Act, which fees must be paid upon lodgement of the application. Should the said application fees not be paid as prescribed the application for a right or permit in terms of the Mineral and Petroleum Resources Development Act cannot be considered to have been made in the prescribed manner and the said application for a right or permit will have to be rejected. In this regard the type of applications must be identified in the table below.

PLEASE STATE TYPE OF AUTHORISATIONS BEING APPLIED FOR.

APPLICATION TYPE	APPLICABLE FEE	Mark with an X where applicable
NEMA S&EIR application on its own	R10 000.00	**X**
NEMA BAR application on its own	R 2 000.00	
NEMWA S&EIR application on its own	R10 000.00	
NEMWA BAR application on its own	R 2 000.00	
NEMA S&EIR application combined with NEMWA S&EIR application	R 15 000.00	
NEMA BAR application combined with NEMWA BAR application	R 3 000.00	
NEMA S&EIR application combined with NEMWA BAR application	R 11 000.00	

1. CONSULTATION BASIC ASSESSMENT AND/ OR SCOPING REPORT

This application for Environmental Authorisation has been compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations (2014) GNR. 982 dated 04 December 2014, as amended, and the requirements of the Mineral Resources and Petroleum Act, 2002 (Act 28 of 2002) ("MPRDA"). Upon the acceptance of the application and upon receiving the reference number, the Draft Scoping Report will be made available for public comment for a period of thirty (30) days. The Scoping Report will then be finalised to include comments received during the Public Participation Process and thereafter submitted to the Department of Mineral Resources and Energy ("DMRE"). Refer also to Section 6 below for further information regarding the Public Participation Process.

2. DETAILS OF THE APPLICANT

Project applicant:	De Beers Consolidated Mines Ltd. Venetia Mine		
Registration no (if any):	2000/011085/07		
Trading name (if any):	De Beers Consolidated Mines Ltd. Venetia Mine		
Responsible Person, (e.g. Director, CEO, etc).:	Section Manager: Safety & Sustainable Development		
Contact person:	Gavin Anderson		
Physical address:	Venetia Mine, R521		
Postal address:	PO Box 668, Musina		
Postal code:	0900	Cell:	N/A
Telephone:	015 575 2773	Fax:	N/A
E-mail:	Gavin.Anderson@debeersgroup.com		

3. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) INFORMATION

EAP:	Shangoni Management Services (Pty) Ltd.
Professional affiliation/registration:	-
Contact person (if different from EAP):	Ashley Miller
Company:	Shangoni Management Services (Pty) Ltd.

Physical address:	Block C8, Block@Nature, 472 Botterklapper Ave, The Willows, 0081		
Postal address:	P.O. Box 74726, Lynwood Ridge		
Postal code:	0040	Cell:	079 884 5290
Telephone:	(012) 807 7036	Fax:	(012) 807 1014
E-mail:	ashley@shangoni.co.za		

If an EAP has not been appointed please ensure that an independent EAP is appointed as stipulated by the NEMA Regulations, prior to the commencement of the process.
The declaration of independence and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the EAP must also be attached as **Appendix 1**.

4. PROJECT DESCRIPTION

Farm name	**Pollution Control Dam ("PCD") 1A:** Portion 2 of the Farm Venetia 103 MS.
	PCD 2: Portion 5 of the Farm Venetia 103 MS.
	PCD 3: Portion 5 of the Farm 103 MS.
	PCD 1 Compartment 4B: Portion 2 of the Farm Venetia 103 MS.
	Fine Residue Deposit ("FRD") 1 Return Water Dam (RWD") expansion: Portion 5 of the Farm Venetia 103 MS.
	On-mine Water Storage Dam ("OMWSD") North and South compartment: Portion 1 of the Farm Venetia 103 MS. Portion 2 of the Farm Venetia 103 MS.
	OMWSD Compartment 3: Portion 2 of the Farm Venetia 103 MS.
	OMWSD Compartment 4: Portion 1 of the Farm Venetia 103 MS.
	K 03 Pit: Portion 0 (RE) of the Farm Venetia 103 MS
	Mine water discharge: Portion 3 of the Farm Venetia 103 MS. Portion 5 of the Farm Venetia 103 MS.

	Pipelines, pumping systems, storm water management channels and trenches: Portion 0 (RE) of the Farm Venetia 103 MS. Portion 1 of the Farm Venetia 103 MS. Portion 2 of the Farm Venetia 103 MS. Portion 3 of the Farm Venetia 103 MS. Portion 4 of the Farm Venetia 103 MS. Portion 5 of the Farm Venetia 103 MS.	
	Relocation of the mine boundary security fence, upgrading of southern access road and re-routing of 22 kV powerlines (including sub-stations): Portion 3 of the Farm Venetia 103 MS. Portion 4 of the Farm Venetia 103 MS. Portion 5 of the Farm Venetia 103 MS.	
Application area:	PCD 1	3.83 ha
	PCD 2	4.78 ha
	PCD 4	1.77 ha
	FRD 1 RWD expansion	6.73 ha
	OMWSD North and South compartment expansion	12.54 ha
	OMWSD Compartment 3	7.94 ha
	OMWSD Compartment 4	1.77 ha
	PCD 3	26.5 ha
	K 03 Pit	12.3 ha
	Mine water discharge	-
	Relocation of the mine boundary security fence (PCD 3 locality only)	Security fence = 0.73 ha Game fence = 0.35 ha
	Upgrading of southern access road to access the PCD 3 locality	4.96 ha
	Re-routing of 22kV powerlines and substations	Approximately 8 km 12 ha
	Construction of storm water management infrastructure including channels and trenches	14.1 km
	Provision of pipelines and pumping systems	25.9 km

Magisterial district	Musina Local Municipality, Vhembe District Municipality
Distance and direction from nearest town	80 km west of Musina
21-digit Surveyor General Code	T0MS00000000010300000 T0MS00000000010300001 T0MS00000000010300002 T0MS00000000010300003 T0MS00000000010300004 T0MS00000000010300005
Locality map	Attach a locality map at a **scale not smaller than 1:250000 and attach as Appendix 2**

Description of the overall activity. **(Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaisance permit, Technical co-operation permit, Additional listed activity)**	Venetia Mine has identified the need to construct additional storm water management infrastructure and water containment facilities with the purpose of de-risking the above mentioned VUP from flooding (to ensure the safety of people working in the newly developed underground mine), to ensure legal compliance to the requirements of the GN.R 704 (Regulations on the use of water for mining and related activities aimed at the protection of water resources) dated June 1999 as published under the National Water Act, 1998 (Act No.36 of 1998) ("NWA"), to ensure compliance to Section 19 (Duty of care) of the NWA, and to ensure compliance to Section 28 (Duty of care) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"). Venetia Mine commenced with the Storm Water Management Project ("SWMP") conceptual studies in 2011, and applied for the required storm water infrastructure in the 2014 Integrated Water Use Licence ("IWUL") amendment application, as was subsequently approved. Since 2014, various studies have been undertaken, including mine residue waste classifications, geohydrological studies and water balance updates to better inform the detailed designs, capacities and locations of the proposed facilities and proposed expansion with a total required storage capacity of 2.11 Mm^3. This application is for the NEMA listed activities as will be triggered by the SWMP. A water use licence application will also be submitted to licence additional water uses and changes to the capacities and locations of licensed water-storage facilities. The SWMP includes the following proposed facilities: • Pollution Control Dam ("PCD") 1: o PCD 1 will be constructed south of the existing Storm Water Control Dams (Dam 1 and Dam 2) ("SWCD"). This facility will be constructed to contain affected water runoff from the VUP surface area, crusher area, main offices and workshops, and will have a capacity of 120 000 m^3. PCD 1 is approved within the current approved *Environmental Management Programme for Proposed Underground Operations and EMP Consolidation for Existing Operations at De Beers Consolidated Mines, Venetia Mine, Limpopo Province*, dated 2012 and prepared by Environmental Resources Management, DMRE reference number: LP30/5/1/2/3/2/1/58/EM ("approved EMPr") and is licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design and capacity of this facility have occurred since the mentioned approvals. A Water Use Licence ("WUL") application will also be submitted for the proposed activity. • PCD 2: o PCD 2 will be constructed to the north-west of the plant area (south-east of the FRD 1 RWD). This facility will be constructed as a containment facility and will only receive water as removed from the open pit, underground operation and other facilities where capacity is required. PCD 2 will have a capacity of 130 000 m^3 and is approved within the current approved EMPr and is licensed by

	the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design, capacity and location of this facility have occurred since the mentioned approvals. A separate WUL application will be submitted for the proposed activity. • PCD 1 Compartment 4B: o PCD 1 Compartment 4B will be constructed as a containment facility and will only receive water as removed from the open pit and underground operation. PCD 1 Compartment 4B will have a capacity of 34 000 m^3. PCD 1 Compartment 4B is approved within the current approved EMPr and is licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design and capacity of this facility have occurred since the EMPr approval, but is correct within the IWUL. • Fine Residue Deposit ("FRD") 1 Return Water Dam (RWD") expansion: o FRD 1 RWD is an existing facility, approved within the EMPr and licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111), that will be expanded by raising the dam walls by 3 metres (expansion not included in the current EMPr and IWUL). The facility currently receives water from the FRD 1 penstock and a small portion of the upstream catchment adjacent to the open pit. The current capacity of FRD 1 RWD is 40 000 m^3 and will be expanded to a capacity of 130 000 m^3. A separate WUL application will be submitted for the proposed activity. • On-mine Water Storage Dam ("OMWSD") North and South compartment expansion: o The On-mine Water Storage Dam ("OMWSD") North and South Compartments are existing facilities, approved within the EMPr and licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111), that will be expanded by raising the dam walls by 2 metres and increasing the capacity by 190 000 m^3 (expansion not included in the current EMPr and IWUL). This will increase the current combined capacity of 460 000 m^3 to 650 000 m^3. The OMWSD Dams only receive water from the open pits, the plant and the Well Fields. A separate WUL application will be submitted for the proposed activity. • OMWSD Compartment 3: o OMWSD Compartment 3 is a new proposed facility that will be constructed north of the OMWSD North Compartment. This facility will be constructed to contain water from open pits, the plant, the underground mine and the Well Fields. OMWSD Compartment 3 will have a capacity of 275 000 m^3. This is a new facility it is not included in the current EMPr and IWUL. A separate WUL application will be submitted for the proposed activity.

- OMWSD Compartment 4:
    - OMWSD Compartment 4 is a new proposed facility that will be constructed to the south-east of the OMWSD North and South Compartments and will occupy a portion of the area of the Attenuation Facility (licensed facility). This facility will be constructed to contain water from open pits, the plant, the underground mine and the Well Fields. OMWSD Compartment 4 will have a capacity of 185 000 m^3. This is a new facility it is not included in the current EMPr and IWUL. A separate WUL application will be submitted for the proposed activity.
- PCD 3:
    - PCD 3 is the main containment facility proposed for the SWMP and will be the first facility to be constructed to de-risk the VUP and ensure compliance to the requirements of GN.R 704 and to ensure compliance to Section 19 (Duty of care) of the NWA. PCD 3 will be constructed to the west of the mine adjacent to the Course Residue Deposit ("CRD"). This facility will be constructed to contain affected water runoff from the upstream catchments inclusive of runoff from the CRD, FRDs and potential overflow from the other upstream water containment facility. The facility will also be constructed to contain water as removed from the open pits and the VUP underground workings. The facility will have a capacity of 1 050 000 m^3. PCD 3 is authorised within the current approved EMPr and is licensed by the IWUL (Licence No.: 14/A63E/ABCGIJ/5111). However, changes to the design, capacity and required footprint of this facility have occurred since the approvals and such changes will require authorisation. A separate WUL application will be submitted for the proposed activity.
- K03 Pit:
    - K03 Pit is an existing open pit. As the ore reserves associated with K03 Pit have been mined out, it is proposed to use K03 Pit as a water containment facility with mine water as removed from the VUP underground mine pumped to K03 Pit before being pumped to the other facilities for containment and reuse. K03 Pit has the capacity to contain 3.5 Mm^3 of water, however, it is anticipated that a volume of 780 000 m^3 of water removed from underground will be stored within the pit. This proposed activity is not authorised. A separate WUL application will be submitted.
- Mine water discharge:
    - Venetia Mine proposes to discharge surplus water to the receiving environment during extreme rainfall events and only when there is insufficient storage capacity, not only as means of managing surplus water but also to ensure safety in the underground workings of the VUP. Current storm water runoff modelling and water balance assessments indicate that a total volume

	of 792 000 m^3 may be required to be discharged annually. As indicated, the discharge of affected water will only be conducted should there be insufficient capacity and in accordance with the relevant approvals (Environmental Authorisation and WUL). Should such a discharge occur, the discharge will occur from PCD 3 and / or the OMWSD. A separate WUL application will be submitted for the proposed activity. • Relocation of the mine boundary security fence, upgrading of southern access road and re-routing of 22 kV powerlines (including sub-stations): o Mine security fence - As PCD 3 will extend beyond the current Venetia Mine security fence, it is required to relocate the security fence around the boundary of PCD 3. o 22 kV powerline - A 22 kV mine powerline traverses the proposed PCD 3 area that will require relocation to direct the powerline around PCD 3. Sub-stations will also be made available. o 22 kV powerline - A 22 kV mine powerline traverses the proposed PCD 1 area that will require relocation to direct the powerline around PCD 1. Sub-stations will also be made available. o Southern access road – The southern access road will be upgraded and expanded to a 10 m wide road (currently 4 m wide) to provide access of construction vehicles to the proposed PCD 3 locality. • Construction storm water management infrastructure including channels and trenches: o Storm water management infrastructure, inclusive of channels and trenches will be constructed to divert affected water runoff to the existing and proposed above-mentioned facilities. o Venetia Mine proposes to construct a seepage collection trench along the western boundary of FRD 1 and FRD 2 to collect any seepage that may occur from the FRDs and direct such to either the North Seepage Dam, FRD 2 RWD or the Southern Seepage Collection Dam (existing facility). The Southern Seepage Collection Dam can discharge to PCD 3. o Venetia Mine also proposes to construct a Northern Seepage Collection trench that will collect seep from the waste rock dump to the north of the mine. The collected seep water will be pumped to FRD 2 RWD for containment. • Provision of pipelines and pumping systems: o Pump stations will be constructed, and a pipeline network established to allow for efficient water reticulation and re-use of water.

5. ACTIVITIES TO BE AUTHORISED

(Please provide copies of Environmental Authorisations obtained for the same property as **Appendix 3)**.

(For an application for authorisation that involves more than one listed activity that, together, make up one development proposal, all the listed activities pertaining to this application must be indicated. Please note that any authorisation that may result from this application will only cover activities specifically applied for).(Attach a proposed site plan, drawn to a scale acceptable to the competent Authority, showing the location of all the activities to be applied for, as **Appendix 4**)

Name of Activity	**ARIAL EXTENT OF ACTIVITY Ha or m²**	**LISTED ACTIVITY (mark with X)**	**APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)/NOT LISTED**	**WASTE MANAGEMENT AUTHORISATION**
Site clearing of the footprint areas of the facilities				
PCD 1	3.83 ha	-	Not listed	-
PCD 2	4.78 ha			-
PCD 4	1.77 ha			-
FRD 1 RWD expansion	6.73 ha			-
OMWSD North and South compartment expansion	12.54 ha			-
OMWSD Compartment 3	7.94 ha			-
OMWSD Compartment 4	1.77 ha			-
PCD 3	26.5 ha	X	GNR 984 Activity 15	-
K 03 Pit	12.3 ha	-	Not listed	-
Mine water discharge	-			-
Relocation of the mine boundary security fence (PCD 3 locality only)	Security fence = 0.73 ha Game fence = 0.35 ha	X	GNR 984 Activity 15	-
Upgrading of southern access road to access the PCD 3 locality	4.96 ha			-
Re-routing of a 22kV powerlines (including sub-stations)	Approximately 8 km 12 ha			-
Construction of storm water management infrastructure including channels and trenches	14.1 km			-
Provision of pipelines and pumping systems	25.9 km			-
Construction and utilisation of the facilities				
PCD 1	3.83 ha	X	GNR 983 Activity 13 GNR 984 Activity 6 GNR 984 Activity 16	-
PCD 2	4.78 ha	X	GNR 983 Activity 13	-

Name of Activity	ARIAL EXTENT OF ACTIVITY Ha or m²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)/NOT LISTED	WASTE MANAGEMENT AUTHORISATION
			GNR 984 Activity 6 GNR 984 Activity 16	
PCD 1 Compartment 4B	1.77 ha	X	GNR 984 Activity 6	-
FRD 1 RWD expansion	6.73 ha	X	GNR 983 Activity 34 GNR 983 Activity 50 GNR 983 Activity 66	-
OMWSD North and South compartment expansion	12.54 ha	X	GNR 983 Activity 34 GNR 983 Activity 50 GNR 983 Activity 66 GNR 985 Activity 23*	-
OMWSD Compartment 3	7.94 ha	X	GNR 983 Activity 13 GNR 984 Activity 6 GNR 984 Activity 16	-
OMWSD Compartment 4	5.12 ha	X	GNR 983 Activity 12 GNR 983 Activity 13 GNR 983 Activity 19 GNR 984 Activity 6 GNR 984 Activity 16 GNR 985 Activity 14*	-
PCD 3	26.5 ha	X	GNR 983 Activity 12 GNR 983 Activity 19 GNR 984 Activity 6 GNR 984 Activity 16 GNR 985 Activity 14*	-
K03 Pit	12.3 ha	X	GNR 984 Activity 6	-
Mine water discharge	-	X	GNR 984 Activity 6	-
Relocation of the mine boundary security fence (PCD 3 locality only)	Security fence = 0.73 ha Game fence = 0.35 ha	X	Not listed	-
Upgrading of southern access road to access the PCD 3 locality	4.96 ha	X	GNR 983 Activity 19 GNR 983 Activity 24 GNR 985 Activity 4* GNR 985 Activity 18*	-

Name of Activity	ARIAL EXTENT OF ACTIVITY Ha or m²	LISTED ACTIVITY (mark with X)	APPLICABLE LISTING NOTICE (GNR 983, GNR 984 or GNR 985)/NOT LISTED	WASTE MANAGEMENT AUTHORISATION
Re-routing of a 22kV powerlines (including sub-stations)	Approximately 8 km 12 ha	X	Not listed	-
Construction of storm water management infrastructure including channels and trenches	14.1 km	X	GNR 983 Activity 19 GNR985 Activity 14*	-
Provision of pipelines and pumping systems	25.9 km	X	GNR 983 Activity 9 GNR 983 Activity 10	-

*NOTE: Venetia Mine is situated approximately 20 km south of the Mapungubwe National Park, which represents the nearest declared conservation area. In Government Notice No. 71 Government Gazette 31832 of 30 January 2009 the then Minister of Environmental Affairs and Tourism, announced the Mapungubwe Cultural Landscape as a world heritage site in terms of the World Heritage Convention Act, 1999 (Act No. 49 of 1999). The Mapungubwe National Park also included a buffer zone that encompassed the already existing and operational Venetia Mine. In 2014, a new proposed buffer was assessed and approved by UNESCO at the 38th session of the World Heritage Committee (Doha, Qatar 2014) with such also accepted and welcomed in the *Statement on the Cabinet Meeting of 25 June 2014* (dated 26 June 2014): "*2.3. Cabinet welcomes the approval of a new buffer zone for the Mapungubwe World Heritage Site by the World Heritage Committee of UNESCO which held its 38th Session in Doha, Qatar, from 15 to 25 June 2014. The new buffer zone is the result of a long consultation process involving landowners, community representatives, non-governmental organisations, mining companies and various government stakeholders. The approval of this new buffer zone is a welcome development for South Africa's efforts to improve the management and protection of its world heritage sites while allowing for responsible and sustainable development.*" This new buffer excludes Venetia Mine. The listed activities as applied for above under Listing Notice 3 may, therefore, no longer be applicable to the proposed project due to the new buffer being accepted by UNESCO. These listed activities have been included for completeness and consideration for exclusion/inclusion by the DMRE.

6. PUBLIC PARTICIPATION

(Provide details of the public participation process proposed for the application as required by Regulation.

Details of the Public Participation process to be followed.

6.1.1. IDENTIFICATION OF INTERESTED AND AFFECTED PARTIES TO BE CONSULTED

IDENTIFICATION CRITERIA	Mark with an X where applicable	
	YES	NO
Will the landowner be specifically consulted?	X	
Will the lawful occupier on the property other than the Landowner be consulted?	X	
Will a tribal authority or host community that may be affected be consulted?	X	
Will recipients of land claims in respect of the area be consulted?	X	
Will the landowners or lawful occupiers of neighbouring properties been identified?	X	
Will the local municipality be consulted?	X	
Will the Authority responsible for power lines within 100 metres of the area be consulted?	X	
Will Authorities responsible for public roads or railway lines within 100 metres of the area applied for be consulted?	X	

IDENTIFICATION CRITERIA	Mark with an X where applicable	
	YES	NO
Will authorities responsible for any other infrastructure within 100 metres of the area applied for be consulted? **Department of Roads**	X	
Will the Provincial Department responsible for the environment be consulted?	X	
Will all of the parties identified above be provided with a description of the proposed mining /prospecting operation as referred above?	X	
Will all the parties identified above be requested in writing to provide information as to how their interests (whether it be socio-economic, cultural, heritage or environmental) will be affected by the proposed mining project?	X	
Other, Specify		

6.1.2. DETAILS OF THE ENGAGEMENT PROCESS TO BE FOLLOWED

Steps to be taken to notify interested and affected parties(Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultations. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. Photographs of notice boards, and copies of advertisements and notices notifying potentially interested and affected parties of the proposed application must be attached as **Appendix)**	**PROVIDE DESCRIPTION HERE** Key stakeholders will be identified and will be directly informed of the proposed development by means of faxes and/or email, site notices, bulk sms and newspaper advertisements. The stakeholder sectors included: • Surface right owners of the affected properties; • The owners and occupiers of the land adjacent to the area subject to the project; • The Municipal Councillor of the Wards; • The Musina Local Municipality which has jurisdiction in the area; • The Vhembe District Municipality; • Various organs of state having jurisdiction in respect of the activity (including the Department of Water and Sanitation (DWS), Limpopo Department of Economic Development Environment and Tourism (LEDET), SANParks. The consultation process with I&APs is an ongoing process and will include a notice to all I&APs, and Background Information Document (BID) notifying I&APs of the proposed application and providing an overview of the proposed project and associated activities. The BID will be distributed by means of email and/or by fax to all identified I&APs. In addition to the above, the following notification and consultation methods will be used during the Scoping Phase: a. Newspaper Advertisements: Advertisements, notifying the public of the project and the Environmental Impact Assessment process will be placed in the Limpopo Mirror Newspaper. b. Site Notices. Notice boards (A2 size) in English will be erected at visible locations in Musina and Alldays and at visible locations at Venetia Mine. The scoping report will be made available for review for 30 days via the following methods: Digital Copy: www.shangoni.co.za Public participation during the Impact Assessment Phase of the process will revolve around a review and inputs into the EIAR and EMP.

	Details of the engagement process of I&APs followed during the course of the assessment and an indication of how issues raised will be addressed and included in the Issues and Response Report. The EIA Report will be available for review for 30 days via the following methods: Digital Copy: www.shangoni.co.za An EIA Phase public meeting will be held to present the EIAR and the specialist findings on the project. Consultation with stakeholders during finalisation of the public participation will entail: • Updating the Issues and Response Report with comments on the EIAR and EMPr. • Distribution of final meeting minutes to the DMRE (Limpopo) and registered I&APs following the public meeting. Once DMRE has made a decision registered stakeholders will be notified of the decision.
Information to be provided to Interested and Affected Parties.	**Compulsory** • The site plan; • List of activities to be authorised; • Scale and extent of activities to be authorised; • Typical impacts of activities to be authorised (e.g. surface disturbance, dust, noise, drainage, fly rock etc.); • The duration of the activity; • Sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land).
	Other, specify: A Background Information Document, containing all of the above information will be distributed all I&APs. The Draft Scoping Report will also be made available for public review and comment for a period of thirty (30) days.
Information to be required from Interested and Affected Parties.	**Compulsory** • To provide information on how they consider that the proposed activities will impact on them or their socio-economic conditions • To provide written responses stating their suggestions to mitigate the anticipated impacts of each activity • To provide information on current land uses and their location within the area under consideration • To provide information on the location of environmental features on site to make proposals as to how and to what standard the impacts on site can be remedied. requested to make written proposals • To mitigate the potential impacts on their socio economic conditions to make proposals as to how the potential impacts on their infrastructure can be managed, avoided or remedied).
	Other, Specify See steps to be taken notify interested and affected parties.

7. Description of the assessment process to be undertaken

ITEM	DESCRIPTION
Environmental attributes. Describe how the Environmental attributes associated with the development footprint will be determined.	As part of the proposed project, all aspects of the environment are considered and include (but are not limited to): • Geology. • Topography. • Soil. • Land use and land capability. • Vegetation • Animal Life. • Surface water. • Groundwater. • Sensitive landscapes (including wetlands). • Air quality. • Noise. • Visual aspects. • Sites of cultural and archaeological importance. • Socio-economic aspects. These aspects of the environment were assessed and, where required, the relevant specialist were appointed to further assess the environmental aspects, respectively. The environmental aspects are described in detail in the Draft Scoping Report and will be further described in detail in the EIA and EMP.
Identification of impacts and risks. (Describe the process that will be used to identify impacts and risks.	Impacts and risks on the various environmental aspects were preliminarily determined through the comparison of the proposed activities, phases of the activities as well as the duration of the proposed activities with the baseline environmental situation and sensitivity of the area (obtained through specialist studies). The potential risks will be further described and assessed in detail as part of the EIAR / EMP. These potential risks will also be ranked and the significance determined.
Consideration of alternatives. Describe how alternatives, and in particular the alternatives to the proposed site layout and possible alternative methods or technology to be applied will be determined.	In terms of the EIA Regulations GNR. 982, dated 04 December 2014, alternatives is defined as *"…different means of meeting the general purpose and requirements of the activity, which may include alternatives to the-* *(a) property on which or location where the activity is proposed to be undertaken;* *(b) type of activity to be undertaken;* *(c) design or layout of the activity;* *(d) technology to be used in the activity; or* *(e) operational aspects of the activity;* *and includes the option of not implementing the activity".*

	The proposed activity was assessed in terms of the above criteria, all possible alternatives identified. As part of the EIA and EMP, the alternatives will be ranked in terms of criteria which include (but not limited to): • Environmental aspects (e.g. Air quality, surface and groundwater, fauna, flora etc.). • Socio-economic aspects (e.g. Sense of place, social licence to operate, hazards to community etc.). • Legal requirements. • Optimum position for connection to underground workings. • Operating costs. • Rehabilitation. It should, however, be noted that the locality of the proposed project is highly dependent on the on the existing activities, available space as well as topography and surface water runoff. Therefore. alternatives in terms of location are limited. A detailed motivation hereto has been provided in the Draft Scoping Report and will be further included in the EIA and EMP.
Process to assess and rank impacts. Describe the process to be undertaken to identify, assess and rank the impacts and risks each individual activity.	The environmental risks associated with any aspect of the environment is determined by plotting the significance of the impact against the probability of the impact occurring. The following approach will be taken in order to assess and rank the risks of the proposed activity: Step 1: Determination of the Probability of the impact by calculating the average between the following factors: • Frequency of the aspect. • Availability of a pathway to the receptor. • Availability of the receptor. Step 2: Determination of the Magnitude of the impact by calculating the average of the following factors: • Duration of impact. • Reversibility. • Extent. • Volume / Quantity / Intensity. • Toxicity / Destruction effect. • Sensitivity of environmental component. Step 3: Determination of the Severity of the impact by plotting the averages that were obtained in Step 1 and Step 2 above for Probability and Magnitude, respectively.

Contribution of specialist reports Describe how specialist reports, if required, will be taken into consideration and inform the impact identification, assessment and remediation process.	Several specialists have been appointed to conduct studies on various biophysical aspects of the environment in relation to the proposed project. These studies include the following: • Desktop Geohydrological Impact Assessment. • Biodiversity Impact Assessment. • Heritage Impact Assessment. • Conceptual Storm Water Management Plan. • Wetland Delineation and Impact Assessment. These specialist studies include a description of the possible impacts which may occur as a result of the proposed projects. The impacts will be assessed and will be ranked during the EIA and EMP Phase, utilising the three (3) step process as described above.
Determination of impact management objectives and outcomes. Describe how impact management objectives will be determined for each activity to address the potential impact at source, and how the impact management outcomes will be aligned with standards.	The comparison of the baseline environment with proposed project will allow for the determination of possible impacts and risks associated with the proposed project (refer also to the description of impact assessment). The objectives are then determined by identifying technical or management options to modify, remedy, control or stop any action, activity, or process which will cause significant impacts on the environment, socio-economic conditions and historical and cultural aspects. Therefore, in the process of determining the impact management objectives, appropriate mitigations measures are also identified.

8. OTHER AUTHORISATIONS REQUIRED

LEGISLATION	Mark with an X where applicable			
	AUTHORISATION REQUIRED		APPLICATION SUBMITTED	
	YES	NO	YES	NO
SEMAs				
National Environmental Management: Air Quality Act		**X**		**X**
National Environmental Management: Biodiversity Act		**X**		**X**
National Environmental Management: Integrated Coastal Management Act		**X**		**X**
National Environmental Management: Protected Areas Act		**X**		**X**
National Environmental Management: Waste Act		**X**		**X**
National legislation				
Mineral Petroleum Development Resources Act	**X**		**X**	
National Water Act	**X**		**X**	
National Heritage Resources Act		**X**		**X**
Others: Please specify		**X**		**X**

Please provide proof of submission of applications in **Appendix 3**.

In the event that an authorization in terms of the National Environmental Waste Management Act is required for any of the activities applied for please state so clearly in order for such an authorisation to be considered as part of this application.

9. DRAFT EMPr

For consultation purposes, provide a high level approach to the management of the potential environmental impacts of each of the activities applied for.

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Geology	Not applicable	• PCD 1 - 3.83 ha. • PCD 2 - 4.78 ha. • PCD 4 - 1.77 ha. • FRD 1 RWD expansion - 6.73 ha. • OMWSD North and South compartment expansion - 12.54 ha. • OMWSD Compartment 3 - 7.94 ha. • OMWSD Compartment 4 - 1.77 ha. • PCD 3 - 26.5 ha. • K 03 Pit - 12.3 ha.	No impact to geology will occur as a result of the proposed SWMP.	Not applicable
Topography Alteration of the natural drainage patterns	Construction		Control: Disturbance to the natural topography should be limited to the construction footprint areas only.	Water management measures in compliance with NWA, 1998 and GN 704, 1999. Compliance with DWS's Best Practice Guideline Series in terms of integrated water and waste management and monitoring.
Soil, land use and land capability Clearing of soil	Construction		Control: Soil must be stripped and stockpiled for future rehabilitation purposes. Additional related mitigation	Rehabilitation in terms of MPRDA and NEMA principles.

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
		• Mine water discharge. • Relocation of the mine boundary security fence (PCD 3 locality only): o Security fence = 0.73 ha. o Game fence = 0.35 ha. • Upgrading of southern access road to access the PCD 3 locality - 4.96 ha • Re-routing of a 22kV powerlines (including sub-stations) - Approximately 8 km, 12 ha	measures include pollution prevention and limiting site clearance to designated footprint areas. Contain spillage; excavated and dispose soil if required. Utilisation of spill kits and/or excavation of affected soil with subsequent disposal at a licensed disposal site. Effective storm water management controls during construction, to minimise runoff, erosion and sedimentation. Storm water channels should have necessary energy dissipators to slow the water flow and limit erosion.	Dust monitoring and dust suppression to reduce dust to comply with NEM:AQA, 2004 and regulations there under. Biodiversity and alien invasive management in accordance with NEMBA, 2004.
Surface water	Construction and Operational		Control: Disturbed areas to be minimised to the direct project	Water management measures in compliance

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Surface water contamination and alteration of natural drainage patterns		• Construction of storm water management infrastructure including channels and trenches - 14.1 km • Provision of pipelines and pumping systems - 25.9 km	footprint areas only. This will minimise the amount of run-off generated and the likelihood of the runoff containment infrastructure failing. Minor spills will be rectified by excavating and disposing of the soil in an appropriate manner. Modify: The SWMP is to ensure the containment of water removed from underground as well as affected surface water runoff. Control: Operate the proposed facilities within their operating capacities and applicable free-bords	with NWA, 1998 and GN 704, 1999.
Groundwater Groundwater contamination	Construction, Operational and Decommissioning		Control:	Water management measures in compliance

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
			Monitoring boreholes will be used to ensure the extent of deterioration of groundwater is monitored post closure. Infrastructure design should be altered to minimise seepage where possible utilizing impermeable catchments to minimise infiltration and related seepage. Modify and control: Maintenance of operating machines and vehicles only to take place in designated areas regularly. Approved environmentally friendly chemicals should be used as far as possible. All hydrocarbons must be stored in bunded areas.	with NWA, 1998 and GN 704, 1999.

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
			Spillages should be cleaned up and discarded correctly immediately after such an event occurs. Contractor induction should include environmental awareness and the correct action to take in the event of a hydrocarbon spill.	
Biodiversity Clearing of indigenous vegetation	Construction		Control and / or stop: Mitigation measures include limiting the footprint area, restricting the footprint area to areas of lower sensitivity and adherence to DFFE permit guidelines.	Rehabilitation in terms of MPRDA and NEMA principles. Permits from DFFE for removal of species in terms of NEMBA (if applicable) General implementation of activities taking Mining

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
				and Biodiversity Guidelines into account.
Sites of archaeological and cultural importance.	Not applicable		No sites of archaeological and cultural importance have been identified that will be affected	Not applicable
Sensitive landscapes Establishment of water containment facilities (specific reference to PCD 3 and OMWSD Compartment 4.	Construction and Operational		Control: Wetlands should be demarcated to prevent unnecessary impact and loss of this habitat.	System and Operational Procedures and training programme in compliance with ISO14001. Water management measures in compliance with NWA, 1998 and GN 704, 1999. Compliance with DWS's Best Practice Guideline Series in terms of integrated water and waste management and monitoring.

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
				Dust monitoring and dust suppression to reduce dust to comply with NEM:AQA, 2004 and regulations there under. Biodiversity and alien invasive management in accordance with NEMBA, 2004.
Air quality Construction of infrastructure associated with the SWMP	Construction and Operational		Control: Dust management to be done on all cleared areas and the unpaved roads. Construction equipment to be serviced at regular intervals.	Dust monitoring and dust suppression to reduce dust to comply with NEM:AQA, 2004 and regulations there under.
Noise Increase in noise levels and disturbance	Construction		Control: Noise pollution is to be monitored as part of the mine's monitoring requirements and	Noise control measures in compliance with Code SABS 0328 of 2008

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
			construction activities are to be kept to normal daylight hours.	
Visual Construction and use of infrastructure associated with the SWMP	Construction and Operational		Control and modify: All disturbed areas outside of the direct footprint of the infrastructure are to be rehabilitated.	Rehabilitation in terms of MPRDA and NEMA principles.
Socio-economic Construction and use of infrastructure associated with the SWMP	Construction and Operational		Control: If possible, goods and services should be procured from local small businesses; this will stimulate indirect job creation. Knowledge sharing and on-the-job training should be viewed as a prerequisite, where feasible, for all contractor's/service providers working on the project and employing local labour. Continued inclusion of skills development programmes in	Implementation of approved Social and Labour Plan.

ACTIVITIES **(E.g. For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc** **E.g. for mining**,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	**PHASE** (of operation in which activity will take place). State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure.	**SIZE AND SCALE** **(of Disturbance)** (volumes, tonnages and hectares or m^2)	**TYPICAL MITIGATION MEASURES** (Eg, storm water control, dust control, noise control, access control, rehabilitation etc…., etc….,)	**COMPLIANCE WITH STANDARDS** (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
			the mine's Social and Labour Plan ("SLP").	

10. CLOSURE PLAN

In the space provided under each heading below, please provide a high level description of the plan for closure and the information that will be provided in the draft EMPr accompanying draft basic assessment report or environmental impact reports going forward.	
Baseline environment Describe how the baseline environment will be determined with the input of interested and affected parties and due cognizance of the current land uses and or existing biophysical environment	The baseline environment will be determined in line with information from the existing closure plan, specialist studies, approved EMPR and relevant documents.
Closure objectives Describe the closure objectives and the extent to which they will be aligned to the baseline environment	The following closure objectives, identified in the 2011 Preliminary Closure Plan (Golder, 2011), are applicable to Venetia Mine: **1. Physical stability** Ensure physical stability to facilitate the implementation of the planned end land use, by: • Closing, dismantling, decontaminating, removing and disposing of surface infrastructure with no post closure beneficial use; • Stabilising the upper surfaces and outer slopes of the WRD, CRD and FRDs in order to create sustainable vegetation growth; • Ensuring long term stable landforms, by limiting surface erosion; and u Limiting dust generation • Ripping, shaping, and vegetating of haul roads with no beneficial post-closure use and the integrating of these into the surrounding surface topography; and • Creating an enviro-berm around the open pit outside the perimeter of the SFI break back zone. This berm will be integrated with the toe paddocks (berm plus associated cross walls) along the inside slopes of the waste rock dumps, creating a barrier and collection for sediment wash-down along the inside waste rock slopes what will be unmodified. The berm with associated collection will also form a protection against pit lip erosion. **2. Environmental quality** To ensure that local environmental quality is not adversely affected by possible physical effects and chemical contamination arising from the mining area as well as to sustain catchment yield as far as possible after closure, by: • Limiting dust generation on the rehabilitated mining area that could cause nuisance and/or health effects to surrounding landowners/communities as well as compromise the desired long term post mining land use;

	• Cleaning-up of sources of possible surface water contamination on the rehabilitated mining area to protect the water quality of the downstream receiving surface water environment; • Providing the required land form protection measures in such a manner that these, when implemented, will limit the adverse effect on catchment yield as far as possible; • Leaving and/or creating the required sediment interception structures to protect the down slope instream habitats against sedimentation and hence habitat impairment; • Providing the required measures to limit at source the generation of contaminants which could adversely affect local groundwater quality, especially relating to the FRDs; • Confirming that the mine residue deposits do not pose an unacceptable long term contamination potential to shallow groundwater quality by conducting the required geochemical analysis; • Demonstrating, through a review of monitoring data and/or predictive modelling, if required, that the effect of contaminant plumes that could be arising and/or are already evident from the FRDs could be remediated by natural attenuation; • Ensure that the rehabilitated mining area is free-draining where possible and run-off is routed to local/natural drainage lines as far as possible; and • Removing off-site, on an ongoing basis, hazardous material and disposing it at the closest hazardous waste disposal facility. As removal is an ongoing process, no on-site hazardous waste build-up, requiring attention at mine closure, should occur. **3. Biodiversity** To create a biological diverse rehabilitated mine site landscape that although it will not fully matching the premining situation, it will not detract from it and possibly add some enhancing features, by: • Establishing by means of a dedicated biodiversity assessment the key features comprising local biodiversity and replicating these on the rehabilitated mine site as far as possible but also adding additional features, such as rocky faces along the waste rock dumps that will provide habitat for small mammels; • Re-establishing, where appropriate, native vegetation on the rehabilitated mining area; • Stabilising disturbed areas to prevent erosion in the short- to medium-term until a suitable vegetation cover has established; and

	• Establishing viable self-sustaining vegetation communities that will encourage the re-introduction of local fauna, as far as possible. **4. Land capability** To re-instate suitable land capabilities over the various portions of the mining area to support the establishment of the desired end land use of conservation, by: • Ensuring that the rehabilitated portions of the mining area are safe and stable in the long-term; • Cleaning-up and reclaiming of contaminated soil areas; • Constructing an enviro-berm / rock barrier around the open pit to limit/prevent access and hence in that way not compromising the planned end land use; and • Implementing those key aspects as far as practically possible to establish a bio-diverse rehabilitated mine as indicated by the dedicated biodiversity work. **5. Health and safety** To limit the possible health and safety threats to humans and animals, by: • Shaping the outer slopes of the waste rock dumps to slopes not steeper than those found in the surrounding undisturbed landscape, provided that these created slopes are stable against collapse; • Constructing an enviro-berm / rock barrier around the open pit (which will not be in-filled) and associated dense vegetation between the pit rim and the inner toe of the berm to limit access further; • Covering the upper surface of the combine FRD with a rocky pioneer layer as far as possible to limit ingress of rainfall into the fines as well as to limit the surface extent of the surface water pool that could be remaining on the upper surface and/or created after rainfall; • Determining the water quality of the remaining upper surface pool to confirm that although this water will be saline, it will not contain hostile contaminates that could pose a threat to animals drinking this water; • Anchoring the waste rock skin to improve the outer slope stability of the FRD in a waste rock drain to limit contaminated seepage along the FRD toe, adding to the above concern of animals' drinking water containing hostile contaminants. • Removing, for safe disposal, all potential process-related contaminants to ensure that no hazardous waste is present on the rehabilitated mine site after closure; and • Demonstrating through a review of monitoring data that no possible surface and/or groundwater contaminant sources remain on the

	rehabilitated mining area that could compromise the planned land use and /or pose health and safety threats. **6. Aesthetic quality** To leave behind a rehabilitated mining site that, in general, is not only neat and tidy, giving an acceptable overall aesthetic appearance that does compromise the planned end land use, by: • Tiding-up the rehabilitated mining area from demolition waste and rubble; • Conducting a dedicated visual assessment to direct the landscaping and rehabilitation of the remaining mining residues to make these amenable for integration into the surrounding landscape; • Landscaping the remaining mine residue deposits as directed by the visual assessment to blend in with the surrounding landscape, as far as possible; • Shaping and levelling rehabilitated areas to create landforms that emulate the surroundings and are free draining; and • Ensuring that the rehabilitated mining area is free draining and disturbed areas are suitably vegetated, where feasible. **7. Social** To ensure that the any infrastructure transfers, measures and/or contributions made by the mine towards the long-term socio-economic benefit of the local communities are sustainable, by: • Identifying infrastructure that will be of value/benefit to local communities and transferring these to third parties as agreed between the mine and these parties and/or the stakeholders; • Timeously communicating and negotiating with local communities and stakeholders on the closure of the mine; • Training and awareness creation to empower the ex-employees and community to effectively manage the financial and/or commercial resources transferred from the mine; and • Clearly defining the roles of the parties responsible for future management of the transferred facilities. The current closure objectives will be reviewed during this project to align the proposed project with the objectives and obtain input form interested and affected parties.
Rehabilitation Plan Describe the scale and aerial extent of the prospecting or mining listed activities to be authorised, including the anticipated prospecting or mining area at the time of closure, and confirm that a site	A conceptual rehabilitation plan will be provided in the draft EMPr, compiled according to legislative requirements.

rehabilitation plan drawn to a suitable scale will be provided in the draft EMPr to be submitted together with the draft EIR or Basic Assessment Report as the case may be.	
Rehabilitation Cost Describe how the rehabilitation cost will be determined and provide a preliminary estimate thereof	Rehabilitation cost will be calculated in line with the mine's current closure cost estimate process as required in terms of Section 24P of the National Environmental Management Amendment Act, 2008 (Act No. 62 of 2008) and will be calculated based on the DMR Guideline for the calculation of the quantum. This amount will be reflected in the annual financial provisioning/closure cost for the whole mine. The size or volume of material to be demolished will be determined using designs and satellite imagery. Each component is classified according to a rate category after which the demolition and rehabilitation cost per item can be calculated.
Decommissioning Considering that rehabilitation must take place upon cessation of an activity, describe when each of activities applied for will be rehabilitated in terms of either the cessation of the individual activity or the cessation of the overall prospecting or mining activity.	The mitigation and recommendations as to be provided for in the EMPr will ensure for sufficient rehabilitation to be undertaken.

Signature of the applicant / Signature on behalf of the applicant:

De Beers Consolidated Mine's

Name of company (if applicable):

25/06/2021

Date:

APPENDIX 1
DECLARATION OF THE EAP

I, , declare that –

General declaration:

- I act as the independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the Regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 of the Regulations and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;
- ~~I have a vested interest in the proposed activity proceeding, such vested interest being:~~

_____

_____

_____

_____

Signature of the environmental assessment practitioner:

Shangoni Management Service (Pty) Ltd.

Name of company:

29 June 2021

Date:

APPENDIX 1 - CV

Celebrating more than 20 years of providing a sustainable and exemplary service that influences decisions affecting the environment

Block C8, Block@Nature, 472 Botterklapper Str, The Willows, 0081

Tel +27 (12) 807-7036 | www.shangoni.co.za | info@shangoni.co.za

Curriculum Vitae for Ashley Miller

Overview and Profile

Ashley obtained his B.Sc (Honours) degree in Environmental Analysis and Management through the University of Pretoria. Ashley is part of the Environmental Authorisations Department at Shangoni Management Services (Pty) Ltd. and has experience in drafting Basic Assessment Reports, Scoping Reports, Environmental Impact Assessments (EIA), Environmental Management Programme Reports (EMPr), Integrated Water and Waste Management Plans (IWWMP) and Integrated Water Use Licence Applications (IWULA). Ashley is also the Product Lead of Environmental Assurance and has the following experience in auditing: Due diligence audits, External Water Use Licence audits, Environmental Authorisation audits, Environmental Management Programme audits, Waste Management Licence audits and Atmospheric Emissions Licence audits. Ashley has also gained valuable experience in Geographic Information Systems (GIS) in compiling regional, locality and infrastructure maps and mine plans.

Education and Skills

BSc Hons. Environmental Analysis and Management – University of Pretoria	2011
BSc Geography – University of Pretoria	2010

Work and Project Experience

Company: Shangoni Management Services

Position: Principal Environmental Consultant

Years with company: 6 Years

Experience in field: 8 Years

Key responsibilities:

Environmental Authorisation-, Waste Management Licence- and Water Use Licence Applications. Services include:

- Communication with client and Government Authorities.
- Project responsibility and co-ordination.
- Authorisation application and report compilation.
- Public Participation.
- Basic Assessment Reports, Scoping Reports, Environmental Impact Assessment Reports (EIARs), Environmental Management Programme Reports (EMPrs) in terms of the National Environmental Management Act (NEMA), 1998, the National Environmental Management Waste Act (NEMWA), 2008, the Mineral and Petroleum Resources Development Act (MPRDA), 2002 and associated Regulations.
- Technical reports in support of Integrated Water Use Licence Applications (IWULAs) and Integrated Water and Waste Management Plans (IWWMPs) in terms of the National Water Act (NWA), 1998.

Clients:

- Msobo Coal: Verkeerdepan Mine (2012 & 2013)
- Stuart Coal: East Colliery (2012 & 2013)
- Petra Diamonds: Kimberley Underground Mines – Joint Venture (2012 & 2013)
- De Beers: Kimberley Mines (2012 & 2013)
- Sasol Mining (Pty) Ltd: Impumelelo Mine (2013 & 2014)
- Ngululu Resources (2014 & 2015)
- Ecca Holdings (Pty) Ltd.: Cape Bentonite Mine (2014, 2015 and 2016)
- China African Precious Metals (Pty) Ltd.: Orkney Gold Mine (2015 & 2016)
- Glencore: Kroondal, Rietvlei and Waterval Mines (2015 & 2016)
- Anglo Operations Pty Ltd: New Vaal Colliery (2016)
- Anglo Operations Pty Ltd: Greenside Colliery (2015)
- Petra Diamonds: Finsch Diamond Mine (2018)
- Anglo Operations Pty Ltd: Isibonelo Colliery (2019)
- Kimberley Ekapa Mining – Joint Venture (2018, 2019 and 2020)
- Stuart Coal: East and Weltevreden Colliery (2012 & 2013)
- Sasol Mining (Pty) Ltd: Impumelelo Mine (2013 & 2014)
- Stuart Coal: South Block Colliery (2012 & 2013)
- Anglo Operations Pty Ltd: Kleinkopje Colliery (2013 & 2014)
- Canyon Coal: Hakhano Colliery (2017)
- Seriti Coal: Kriel Colliery (2018)
- Afrisam: Ulco Operation (2019)
- Anglo Operations Pty Ltd: Isibonelo Colliery (2019)

- Anglo Operations Pty Ltd: Goedehoop Colliery (2018)
- Kimberley Ekapa Mining Joint Venture (2019)
- Anglo Coal: Rapid Loading Terminal (2019)

Key responsibilities:

Auditing. Services include:

- Environmental Management Programme (EMP) Performance Assessments and Legal Compliance Assessments.
- Environmental Authorisation- and Water Use Licence Compliance Audits.

Clients:

- Stuart Coal East Colliery (2014)
- Stuart Coal South Colliery (2014)
- Stuart Coal Weltevreden Colliery (2014)
- Sibanye Gold Burnstone Gold Mine (2015)
- Anglo Inyosi Coal: Zibulo Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Khwezela Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Mafube Colliery (2015 – 2019)
- Seriti Resources: New Denmark Colliery (2015 – 2019)
- Seriti Resources: New Vaal Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Greenside Colliery (2015 – 2019)
- Seriti Resources: Kriel Colliery (2015 – 2019)
- Glencore: Kroondal Mine (2016)
- Glencore: Waterval Mine (2016)
- Glencore: Rietvly Mine (2016)
- Sishen Iron Ore: Sishen Iron Ore Mine (2017 & 2019)
- HCI Coal: Mbali Colliery (2018)
- HCI Coal: Palesa Colliery (2018, 2019 and 2020)
- Glencore Alloys Carbon Division Middelburg operation (2012)
- Stuart Coal Weltevreden and East Colliery (2012 & 2013)
- Agrisuperior warehouse (2013)
- Glencore Alloys Carbon Division eMalahleni operations (2014)
- Glencore Alloys Carbon Division Middelburg operation (2014)
- Anglo Inyosi Coal: Zibulo Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Khwezela Colliery (2015 – 2019)
- Anglo Operations Proprietary Limited: Mafube Colliery (2015 – 2019)
- Seriti Resources: New Denmark Colliery (2015 – 2019)
- Seriti Resources: New Vaal Colliery (2015 – 2019)

- Anglo Operations Proprietary Limited: Greenside Colliery (2015 – 2019)
- Seriti Resources: Kriel Colliery (2015 – 2019)
- Kumba Iron Ore: Thabazimbi Iron Ore Mine (2016)
- Sishen Iron Ore: Sishen Iron Ore Mine (2017 & 2019)
- HCI Coal: Mbali Colliery (2018)
- HCI Coal: Palesa Colliery (2018, 2019 and 2020)

International projects:

Environmental authorisation application for a large scale opencast coal mine and Environmental authorisation application for a 300 MW coal fired power station. Services include:

- Overall project management.
- Management of Tanzanian Consultants.
- Management Tanzanian specialists.
- Management of South African specialists.
- On-going communication with client, consultants and specialists.
- On-going Tanzanian legislation review.
- Authorisation application and report compilation (Scoping Reports and Environmental Impact Assessment Reports).
- Project budgeting and administration.

Clients:

- Tanzania - Kibo Mining PLC: Mbeya Coal to Power Project (2016)

Declaration of Content

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.

Date: 21 May 2021

Ashley Miller

Celebrating more than 20 years of providing a sustainable and exemplary service that influences decisions affecting the environment

Block C8, Block@Nature, 472 Botterklapper Str, The Willows, 0081

Tel +27 (12) 807-7036 | www.shangoni.co.za | info@shangoni.co.za

Curriculum Vitae for Brian Hayes

Overview and Profile

Brian has for the past 29 years been actively involved in environmental management and engineering primarily in the mining, FMCH and petrochemical industries. A registered professional engineer (Chemical) with a master's degree in environmental engineering, Brian is responsible for quality assurance within the environmental department whilst also actively involved in consulting to clients on aspects and projects related to environmental assurance.

Education and Skills

Leadership Development Program – SA Breweries	1999
M.Sc. Environmental Engineering (Cum Laude) – University of Nottingham, UK	1997
B Eng Chemical – University of Stellenbosch	1992

Professional Affiliations

Registered as Professional Engineer with the Engineering Council of South Africa (ECSA).

Work and Project Experience

Company: Shangoni Management Services

Position: Technical and quality assurance

Years with company: 21 Years

Experience in field: 29 Years

Key responsibilities:

Environmental Authorisation-, Waste Management Licence-, Water Use Licence-, Air Emission Licence Applications. Services include:

- Support project teams for Environmental Impact Assessment, Water Use License, Waste License and Atmospheric Emission License applications. Main duties include legal support, technical review/support and key meetings with clients and relevant authorities (e.g. DWS and DMR).

Water Management. Services include:

- Support our technical specialists on surface water and groundwater management, including hydrology, geohydrology, water quality and water demand management.

Air Quality Management. Services include:

- Support our technical team on air emission inventories, air dispersion modelling, air quality impact assessments and management plans.

Trained as Clean Development Mechanism ("CDM") lead auditor by PriceWaterhouseCoopers (SA). Involved in validation/verification projects (for PwC and ERM CVS) as lead/technical expert. Services include:

- Biogas to Energy Project (SA)
- Biogas flaring (SA)
- Methane Capture and Electricity Generation (SA)
- Commercial Solar Heating (SA)
- Energy Efficiency (SA)
- Municipal waste composting (Sudan)
- Municipal waste flaring (Sudan; SA)
- Cogeneration with Waste Smelter Gas (SA)
- Gas flaring of associated gas (Nigeria)

SHE Management Systems. Services include:

- Managed team of 10 consultants for implementing OHSAS 18001 and ISO 14001 within Shell Nigeria (5-year project). Operations as covered include flow stations, pipeline operations, near shore, off shore and swamp oil rig operations.

Environmental Legal Compliance. Services include:

- Acting as technical lead to environmental legal assurance projects for the mining and industrial sectors.

Environmental Legal Training. Services include:

- Facilitate Environmental Legal training courses for mining and industrial sectors, also lecturer (part-time) at University of Pretoria: Mining Faculty.

Declaration of Content

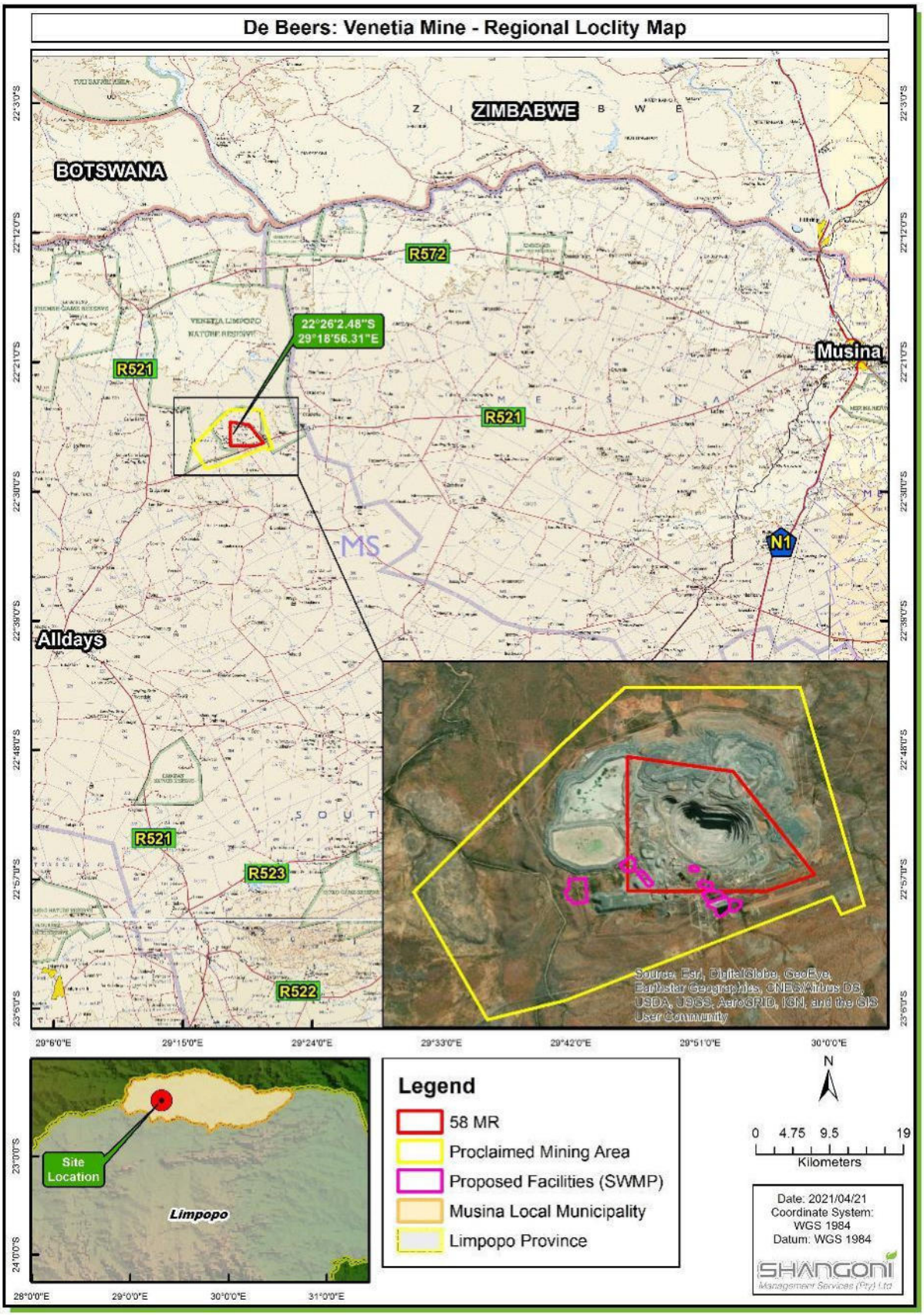
I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.

Date: 21 May 2021

Brian Hayes

Pr.Eng

APPENDIX 2 – LOCALITY MAP



APPENDIX 3 – ENVIRONMENTAL AUTHORISATIONS

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

Private Bag X 9467, Polokwane, 0700, Tel: 015 287 4761, Fax: 015 287 4729
DME Building, 101 Dorp Street, Polokwane, 0699

Enquiries: Mr Kolani T.C **Ref:** LP 30/5/1/3/2/1 (58) EM
E-Mail Address: Thivhulawi.Kolani@dmr.gov.za **Sub-Directorate:** Mine Environmental Management

REGISTERED LETTER

The General Manager
De Beers Consolidated Mines Limited (Venetia Mine)
P.O Box 668
MUSINA
0900

Dear sir/ Madam

Fax Number 011 804 2289

APPROVAL ON THE AMENDMENT ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR THE PROPOSED UNDERGROUND MINE AND RELATED ACTIVITIES IN RESPECT OF THE FARM VENETIA 103 MT, SITUATED IN THE MAGISTERIAL DISTRICT OF MUSINA: LIMPOPO REGION.

An amendment Environmental Management Programme submitted by you, has been approved, in terms of Section 39 (6) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002), Your attention is directed to the fact that:

1. This approval does not purport to absolve Venetia Mine from its common law obligations towards the owner of the surface of land affected.

2. This approval may be amended or withdrawn at any stage for non-compliance approval and provides no relief from the provisions of any other relevant statutory or contractual obligations.

3. Environmental management must conform to the amendment Environmental Management Programme as approved.

4. Mining activities must conform to all relevant legislations, especially the National Water Act, 1998, as well as the Mine Health and Safety Act, 1996 and such other conditions as may be imposed by the Regional Manager or any other official of this office, duly authorized thereto.

5. Rehabilitation of the disturbed surface caused by mining activities at all times must comply with the said amendment Environmental Management Programme.

6. The financial provision provided in terms of Regulation 54 (2) of the Act must be annually adjusted to conform to the above-mentioned mining activities.

7. A performance assessment, monitoring, and evaluation report must be submitted annually to this office or as determined by the Regional Manager, or at any other time that an officer of this office, duly authorized thereto requests.

8. Any alteration or deviation from the programme must be reported to the Regional Manager for his approval or consideration.

9. A copy of the amendment Environmental Management Programme must always be available on the mining premises for inspection by duly authorized officers.

10. Your attention is also drawn to the provisions Section 3 and 5 of the Mine Health and Safety Act, Act 1996 (Act 29 of 1996).

11. The management measures for biodiversity, soil and water must be adhered to during mining operation as recommended by the studies contained in the amendment EMP.

12. Should any heritage resources being discovered during mining operation, mining operation must cease immediately and a representative from South African Heritage Resources Agency must be contacted immediately.

13. No protected trees must be damaged or removed on the mining area without a necessary permit from the Department of Agriculture Forestry and Fisheries.

14. Any activities listed in terms of new NEMA regulation must get necessary approval from Department of Economic Development Environment and Tourism prior to the commencement of such activities.

.....

CHIEF DIRECTOR: MINERAL REGULATION AND ADMINISTRATION

NOTHERN REGIONS

DATE: 01/10/2012

ACKNOWLEDGEMENT OF RECEIPT Motsamai Evans Boroka

DATE: 15/10/2012

environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA · 0001· Fedsure Building · 315 Pretorius Street · PRETORIA
Tel (+ 27 12) 310 3911 · Fax (+ 2712) 322 2682

Reference: 14/12/16/3/1/9
Enquiries: Linda Poll-Jonker
Telephone: 012-395-1767 **Fax:** 012-320-7539 **E-mail:** lpoll-jonker@environment.gov.za

Mr Azwihangwisi Mulaudzi
Regional Manager: Limpopo Region
Department of Mineral Resources
Private Bag x9467
POLOKWANE
0700

Fax no: 015 287 4729

PER FACSIMILE / MAIL

Dear Mr Mulaudzi

COMMENTS ON THE EIA/EMP FOR THE PROPOSED VENETIA UNDERGROUND MINING OPERATIONS, LIMPOPO

The letter dated 12 July 2012 requesting comments on the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for the proposed Venetia Underground Mining Operations has relevance.

The Department has evaluated the EIA/EMP dated June 2012 and would like to draw your attention to the following:

1. The Department requires that the same species of protected trees that are removed, be replanted in a ratio of 5:1.

2. The Department expects that there will be baboon spiders on site, and maybe other ground-living Invertebrata as well, which are Threatened or Protected Species listed in terms of the National Environmental Management: Biodiversity Act, 2004. These organisms will in all probability be killed by the proposed mining related activities.

   The occurrence of these species needs to be verified by a suitably qualified specialist, and if such species do occur the Department requires a rescue plan to be submitted and approved prior to the commencement of construction activities and a permit needs to be acquired from the provincial conservation body. If the species is widespread in the area, rehabilitation is not needed, and the rescue could be done by interest groups that collect these species, i.e. spider clubs. De Beers should also note that if Bullfrogs are impacted by the mine footprint, this activity will also need a permit, as Bullfrogs are also listed in TOPS.

3. Any additional security must make use of dark sky friendly lighting as far as possible.

4. All invasive plants must be removed after development has taken place, with follow-up actions for at least two years post-development.

5. For purposes of the world heritage site, the Archaeological Impact Assessment (AIA) does not meet standards set out by ICOMOS; as it fails to look at the impacts from a perspective of the outstanding universal value of the Mapungubwe Cultural Landscape. This study needs to be conducted in line with Terms of Reference as developed by this Department.

6. For a project like this, a Heritage Impact Assessment (HIA) instead of an AIA should have been conducted in line with Section 38 of the National Heritage Resources Act (NHRA). Conducting an AIA instead of an HIA has resulted in a narrow focus leaving out other heritage aspects.

7. Based on the outcomes of the HIA, a Heritage Management Plan (HMP) may be required or may form part of the HIA and will have to be implemented and monitored as part of the EMPR.

8. The use of only the NHRA in the AIA has resulted in flawed conclusions as the AIA has failed to assess the archaeological sites in the context of a World heritage Cultural Landscape.

9. The AIA has only applied the NHRA in assessing the significance of the sites and thus only focused on the levels of significance afforded by the NHRA. It is therefore important that a more detailed heritage impact assessment be conducted to look at all aspects of heritage in relation to the outstanding universal value of the cultural landscape. The mitigation measures proposed by this HIA must be incorporated into the EMPR.

The Department does not have any objections to the development of the underground mining operations at the Venetia mine in Limpopo on condition that the mitigation and management measures presented in the EMPR, dated July 2012, as well as the points mentioned above are adhered to.

Yours faithfully

Fatima Rawjee

Mr Mark Gordon
Chief Director: Integrated Environmental Authorisations
Department of Environmental Affairs
Letter signed by: Ms Fatima Rawjee
Designation: Acting Director: Integrated Environmental Authorisations
Date: 21/09/2012.

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

Enq: R. V. Mthombeni **Tel:** (015) 290 7057 **Fax:** (015) 295 5015, **E-Mail:** MthombenRV@ledet.gov.za, **Ref No.:** 12/1/9/2 – V9

De Beers Consolidated Mines (Pty) Limited
P. O. Box 668
MUSINA
0900

For attention: Mr Christiaan Peter Sivertsen **Fax no:** (015) 534 2019

ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED UNDERGROUND OPERATIONS AND CONSOLIDATION OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP) FOR THE EXISTING DE BEERS CONSOLIDATED MINE OF VENETIA LOCATED ON THE FARM VENETIA 103 MS WITHIN THE JURISDICTION OF MUSINA LOCAL MUNICIPALITY OF VHEMBE DISTRICT

With reference to the abovementioned application, please be advised that the Department has decided to grant authorisation. The environmental authorisation and reasons for the decision are attached herewith.

In terms of regulation 10(2) of the Environmental Impact Assessment Regulations of 2010, you are instructed to notify all registered interested and affected parties, in writing and within 12 (twelve) calendar days of the date of the Department's decision in respect of your application as well as the provisions regarding the making of appeals that are provided for in the Regulations.

Should you wish to appeal any aspect of the decision, you must, *inter alia*, lodge a notice of intention to appeal with the MEC for Economic Development, Environment and Tourism within 20 days of receiving this letter, by means of one of the following methods:

By facsimile : (015) 293 8317
By post : Private Bag X 9484, **POLOKWANE**, 0700
By hand : 3rd floor, Evridiki Towers, 20 Hans van Rensburg Street, **POLOKWANE**, 0699

Should you decide to appeal, you must serve a copy of your notice on intention to appeal on all registered interested and affected parties as well as a notice indicating where, and for what period, the appeal submission will be available for inspection.

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM
ENVIRONMENTAL IMPACT MANAGEMENT
2012 -07- 13
P.O. BOX 5[illegible] POLOKWANE 0700
TEL: 015 29[illegible]
LIMPOPO PROVINCE

Yours faithfully

SENIOR MANAGER
ENVIRONMENTAL IMPACT MANAGEMENT
DATE: 13/07/2012

Cc: Environmental Resources Management (ERM) **For attention:** Ms Kate-Stuart Williams
Fax no: (011) 804 2289

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

ENVIRONMENTAL AUTHORISATION

Authorisation register number:	12/1/9/2-V9
Last amended:	First issue
Holder of authorisation:	De Beers Consolidated Mines (Pty) Limited
Location of activity:	The proposed activity is located on the farm Venetia 103 MS, approximately 80km west of Musina and 40km south-east of Alldays, and the border with Botswana and Zimbabwe is situated approximately 25km to the north. Adjacent to the existing Venetia mine is the Venetia Limpopo Nature Reserve (VLNR) comprising of 36 000 ha in extent within the jurisdiction of Musina Local Municipality of Vhembe District, Limpopo Province.

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

DECISION

ACRONYMS

1. **NEMA**	The National Environmental Management Act, 1998 (Act 107 of 1998), as amended.
2. **Regulations**	EIA Regulations of 18 June 2010 in terms of Chapter 5 of NEMA.
3. **EIA**	Environmental Impact Assessment.
4. **Department**	Department of Economic Development, Environment and Tourism.
5. **EA**	Environmental Authorisation.
6. **EMPr**	Environmental Management Programme.

The Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this EA, that the applicant should be authorised to undertake the activity specified below.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1.

ACTIVITIES AUTHORISED

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2010 the Department hereby authorises **De Beers Consolidated Mines (Pty) Limited** with the following contact details –

Mr Christiaan Peter Sivertsen
P. O. Box 668
MUSINA
0900

Tel no: (015) 575 2700 **Fax no:** (015) 534 2019

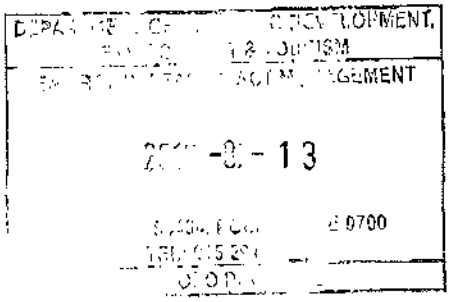
to undertake the following activities:

Activity number and Listing Notice	Activity description
Activity no 1 of Government Notice R. 544 of 18 June 2010	"The construction of facilities or infrastructure for the generation of electricity where the electricity output is more than 10 megawatts but less than 20 megawatts"
Activity no 9 (i) (ii) of Government Notice R. 544 of 18 June 2010	"The construction of facilities or infrastructure exceeding 1000m in length for the bulk transportation of water, sewage or storm water- (i) With an internal diameter of 0,36m or more, or (ii) With a peak throughput of 120 litres per second or more".
Activity no 11 of Government Notice R. 544 of 18 June 2010	"The construction canals, channels and weirs where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line"
Activity no 12 of Government Notice R. 544 of 18 June 2010	"The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 19 of Notice 545 of 2010"
Activity no 22 (ii) (iii) of Government Notice R. 544 of 18 June 2010	"The construction of a road, outside urban areas (ii) where no reserve exists where the road is wider than 8 metres or; (iii) 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 Notice 545 of 2010"
Activity no 27 (iv) (v) of Government Notice R. 544 of 18 June 2010	"The decommissioning of existing facilities or infrastructure, for (iv) activities , where the facility or the land on which it is located is contaminated; (v) storage, or storage and handling, of dangerous goods of more than 80 cubic metres".
Activity no 37 (a) (b) of Government Notice R. 544 of 18 June 2010	"The expansion of facilities or infrastructure for the bulk transportation of water, sewerage or storm water where (a) the facility of infrastructure is expanded by more than 1000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more".

	(c)
Activity no 41 of Government Notice R. 544 of 18 June 2010	"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 50000 cubic metres or more"
Activity no 47 (ii) of Government Notice R. 544 of 18 June 2010	"The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometer – (ii) where no reserve exists, where the existing road is wider than 8 metres"
Activity no 49 (ii) of Government Notice R. 544 of 18 June 2010	"The expansion of facilities or infrastructure for the bulk transportation of dangerous goods: (ii) in liquid form, outside an industrial complex or zone, by an increased throughput capacity of 50 cubic metres or more per day"

Activity number and Listing Notice	**Activity description**
Activity no 3 of Government Notice R. 545 of 18 June 2010	"The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres"
Activity no 5 of Government Notice R. 545 of 18 June 2010	"The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or 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 that Act will apply"
Activity no 6 (ii) of Government Notice R. 545 of 18 June 2010	"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 cubic metres per day"
Activity no 15 of Government Notice R. 545 of 18 June 2010	"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 hectares 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 19 of Government Notice R. 545 of 18 June 2010	"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 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more"

Activity number and Listing Notice	**Activity description**
Activity no 2 (iii) (ff) of Government Notice R. 546 of 18 June 2010	"The construction of a reservoirs for bulk water supply with a capacity of more than 250 cubic metres"
Activity no 10 (ii) (gg) of Government Notice R. 546 of 18 June 2010	"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 cubic metres"
Activity no 16 (iii) (iv) of Government Notice R. 546 of 18 June 2010	"The construction of – (iii) buildings with a footprint exceeding 10 square metres in size; or (iv) infrastructure covering 10 square metres or more"
Activity no 23 of Government Notice R. 546 of 18 June 2010	"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 cubic metres or more but less than 80 cubic metres"
Activity no 24 (c) (d) of Government Notice R. 546 of 18 June 2010 	"The expansion of (d) buildings where the buildings will be expanded by 10 square metres or more in size; or (e) infrastructure where the infrastructure will be expanded by 10 square metres or more" where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line"
Activity no 26 of Government Notice R. 546 of 18 June 2010	"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"

as described in the amended Environmental Impact Assessment Report (EIAR) received by the Department on 15 June 2012 at:

Alternative S1 being the preferred option is authorised and is described as follows;

Alternative S1[2]	Latitude	Longitude
Portion 1 of the farm Venetia 103 MS	22° 25' 55.25"	29° 17' 06.83"
Portion 2 of the farm Venetia 103 MS	22° 25' 55.25"	29° 17' 06.83"
Portion 3 of the farm Venetia 103 MS	22° 25' 06.81"	29° 17' 43.65"
Portion 4 of the farm Venetia 103 MS	22° 24' 35.25"	29° 19' 13.59"
Portion 5 of the farm Venetia 103 MS	22° 24' 37.81"	29° 19' 42.77"
Remaining extent of the farm Venetia 103 MS	22° 24' 53,43"	29° 20' 17.97"
Portion 1 of the farm Krone 104 MS	22° 26' 13.17"	29° 20' 26.95"
Remaining extent of the farm Krone 104 MS	22° 26' 35.75"	29° 20' 16.11"
Remaining extent of the farm Rugen 105 MS	22° 26' 57.13"	29° 19' 09.69"
The farm Drumsheugh 99 MS	22° 27' 11.52"	29° 19' 10.78"
The farm Schroda 46 MS	22° 27' 18.76"	29° 18' 46.18"
The farm Greefswald 37 MS	22° 27' 21.47"	29° 17' 52.73"

The proposed activity entails the establishment of underground mining operations at an existing open cast Venetia Mine, located on the farm Venetia 103 MS, located approximately 80km west of Musina and 40km south-east of Alldays Township, within the jurisdiction of Musina Local Municipality of Vhembe District in the Limpopo Province, hereafter referred to as "the property".

Associated with the activity are the following:

- Production shaft;
- Services Shaft with associated headgears;
- Two ventilation shafts;
- Underground crusher and conveyors;
- Underground fuel storage and workshops;
- A compressed air facility and a possible refrigeration Plant;
- Underground storage and laydown areas;
- Upgrading of the existing electrical substation, electrical yard and the required power lines
- Construction of sewage transfer station and pipelines to the existing Sewage Treatment Works;
- Extension of the Coarse Residue Deposit (CRD) and extension of Fine Residue Deposit (FRD);
- Extension and upgrading of the existing river diversion;
- Construction and development of pollution Dams with a combined storage capacity of 585, 000m^3;
- Relocation and alteration of surveillance roads along the property perimeter;
- Decommissioning of existing salvage yard and disused prefabricated housing;
- Widening of haul roads for access and ore /waste transport;
- Upgrading of refuelling bays by increasing storage capacity; to 27m^3;
- Construction of the waste management facility (Salvage Yard);
- Construction of new buildings (administrative and commercial);
- Construction of new Reservoirs;
- Upgrading of the primary crusher;
- Upgrading of existing building infrastructure such as Security building, Supply Chain Services, Skills Development Centre, Wellness Centre and Explosives magazine area;

- Relocation of helipad;
- Construction of new change houses; and
- Upgrading of yard facilities.

The proposed development within an existing open cast mining operations will cover an area of approximately 3 000 ha in extent.

The granting of this EA is subject to the conditions set out below

CONDITIONS

1 SCOPE OF AUTHORISATION

1.1 This EA applies only to the above mentioned activity, i.e., the establishment of underground operation at an existing open cast Venetia mine, located on the farm Venetia 103 MS, as indicated in the amended Environmental Impact Assessment Report (EIAR) received by the Department on 15 June 2012.

1.2 Should the authorised development trigger activities that are listed in Section 21 of National Environmental Management: Air Quality Act (No.39 of 2004) (NEMAQA), an Atmospheric Emission License (AEL) must be obtained prior the commencement of activities.

1.3 A Water Use License (WUL) for the proposed groundwater abstraction and operation of sewage treatment plant must be obtained from the Department of Water Affairs (DWA) prior commencement of activities on site.

1.4 The holder of the EA shall be responsible for ensuring compliance with the conditions contained in this EA. This includes any person acting on the holder's behalf, including but not limited to, an agent, servant, contractor, sub-contractor, employee, consultant or person rendering a service to the holder of the EA.

1.5 Any changes to, or deviations from, the project description set out in this EA must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the EA to apply for further authorisation in terms of the Regulations.

1.6 This EA does not negate the holder of the EA's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity;

1.6.1 Relevant legislation that must be complied with by the holder of this EA includes, inter alia:

- The National Heritage Resource Act (Act 25 of 1999);
- The Occupational Health and Safety Act, 1993 (Act 85 of 1993);
- The National Water Act, 1998 (Act 36 of 1998);
- The National Environmental Management: Waste Act, 2008 (Act 59 of 2008);

- The Limpopo Environmental Management Act, 2003 (Act No. 7 of 2003);
- The Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965); and
- The Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

2 APPEAL OF AUTHORISATION

2.1. The holder of the EA must notify all registered interested and affected party, in writing and within 12 (twelve) calendar days, of receiving notice of the Department's decision to authorise the activity.

2.2. The notification referred must –

2.2.1 Specify the date on which the EA was issued;

2.2.2 advise all the interested and affected party that a copy of the EA will be furnished on request;

2.2.3 give the reasons for the decision; and

2.2.4 inform all the interested and affected parties of the appeal procedure provided for in Chapter 7 of the Regulations.

3 MANAGEMENT OF THE ACTIVITY

3.1 The Environmental Management Programme (EMPr) compiled by Environmental Resources Management (ERM) and submitted as part of the application for an EA is hereby approved by the Department and must be adhered to throughout the lifecycle of the activity.

3.2 The contents of the EMPr and its objectives must be made known to all contractors, subcontractors, agents and other people working on the site, and any updates or amendments to the EMPr must be submitted to the Department for approval.

3.3 Construction activities must be limited to the current mining lease area as applied for, biodiversity features occurring on the outskirt of the operation footprint must not be encroached upon.

3.4 Should a need arise to upgrade the existing wastewater treatment facility, an application for an amendment of the approved Waste Management Licence (WML) must be lodged with the Department of Environmental Affairs.

3.5 The recommendations and mitigation measures recorded in the amended EIAR received by the Department on 15 June 2012 must be adhered to and incorporated as part of the EMPr where applicable.

3.6 The implementation of water management measures must be aligned with the Department of Water Affairs (DWA) Best Practice Guidelines series. The monitoring and reporting on the state of the water resources must be carried out on monthly basis to detect early and mitigate appropriately the impacts from the mining activities as they arise.

3.7 The applicant shall note that in terms of Section 19 (1) of the National Water Act, 1998 (Act 36 of 1998), " an owner of land, a person in control of land or a person who occupies or uses the land

on which – (a) any activity or process is or was performed or undertaken, or (b) any other situation exists, which causes, has caused or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring." Therefore any pollution incidents(s) associated with the proposed development must be reported to the Regional Office of the Department of Water Affairs within 24 hours.

3.8 The mitigation measures as contained in the "surface water input to EIA for planned underground mining and EMP consolidation" report must be implemented. This includes amongst others:

3.8.1 In order to ensure sustainable rehabilitation of all the mine residue deposit, the storm water runoff must be contained on top of these facilities the benches along the outer slope of the residue deposits and/or along the outer toe-line. This will increase the moisture regime in the profile which will enhance vegetative growth and also contains all sediment wash-off which normally impact on the storm water control system and the environment.

3.8.2 To limit the runoff volume to the on-site pollution control dams, measures must be put in place to control potentially contaminated storm water runoff at source, such as along the toe of the waste rock deposit, coarse residue deposit and the fine residue deposit.

3.8.3 Additional water control structures are required to redirect runoff from catchment 2 and 3 in order to contain most of the runoff in the proposed pollution control dam or the existing pit storm water control dam, etc.

3.9 Accidental spillages of hazardous substances must be reported to Department of Water Affairs (DWA) within 24 hours and the polluted areas must be remediated or cleaned as stated in section 20 of the National Water Act (NWA), 1998 (Act No 36 of 1998).

3.10 Section 28 of the NEMA places a duty of care on **De Beers Consolidated Mines (Pty) Limited** to ensure that reasonable measures are taken to prevent pollution or degradation of the environment from occurring, continuing or recurring. Should any environmental damage result from this development or the operation thereof **De Beers Consolidated Mines (Pty) Limited** must within 14 days of the damage being caused, rectify the situation at his/her own expense.

3.11 The noise impact study conducted by F le Malherbe and dated October 2011 revealed that there is no noise management program in place. In this regard the following must be done:

3.11.1 Regular maintenance schedules, especially for diesel – powered equipment, must include the checking of the functional state of all intake and exhaust noise attenuators, the effectiveness of enclosures or any other noise control measures;

3.11.2 Monthly noise audits must be conducted on all diesel powered equipment. A change in the noise emission characteristics of equipment must serve as a trigger for maintenance inspection;

3.11.3 A noise complaint register must be developed and an effective follow-up procedure be implemented;

3.11.4 A yearly survey of ambient noise levels at the boundary of Venetia Mine must be conducted, using procedures specified in SANS 10103.

3.11.5 Blasting must only take place according to a fixed and published schedule; and

3.11.6 Records all audits and actions must be kept on site for monitoring purposes.

4 MONITORING

4.1 The applicant must appoint a suitably experienced Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation / rehabilitation measures and recommendations referred to in this EA are implemented and to ensure compliance with the provisions of the approved EMPr.

4.2 The ECO shall keep record of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO.

4.3 The holder of the EA must notify the Department, in writing and within 48 (forty eight) hours, if any condition of this EA cannot be or is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance. Non-compliance with a condition of this EA may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.

4.4 Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.

4.5 The Department reserves the right to monitor and audit the development throughout its full life cycle to ensure that it adheres to all the conditions and mitigation measures included in the final Scoping Report (SR) and the amended EIAR. Records of monitoring and auditing must be available for inspection to any relevant authority inspecting the development.

DEPARTMENT OF ENVIRONMENTAL AFFAIRS
ENVIRONMENTAL IMPACT MANAGEMENT
2012 -07- 13
P.O. BOX 55464, POLOKWANE 0700
TEL: 015 291 1315
environmental officer

5 RECORDING AND REPORTING TO THE DEPARTMENT

5.1.1 De Beers Consolidated Mines (Pty) Limited must appoint an independent environmental officer to prepare compliance monitoring/environmental audit reports every six (6) months from the date of the authorisation. These reports must indicate the applicant's compliance status with regards to the conditions of the Environmental Authorisation. These reports must be submitted to the Department within fourteen (14) days after the lapse of the six (6) months.

5.2 The environmental audit / compliance monitoring report must include, *inter alia* -

5.2.1 Specifically state whether the conditions of this authorisation are being adhered to;

5.2.2 Contain recommendations regarding non-compliance or potential non-compliance and must specify target dates for the implementation of recommendations; and

5.2.3 Include an interpretation of all available data and test results regarding the operation of the site and all its impacts on the environment.

5.3 Applicant must ensure that an up to date emergency register is kept during both construction and operational phase. This register must be made available upon request by the Department.

6 NOTIFICATION TO AUTHORITIES

6.1 Seven (7) days written notice must be given to the Department prior to the commencement of construction activities. Commencement for the purposes of this condition includes site preparation. A notice must include a date on which it is anticipated that the activity will commence, and must include the name and contact details of the appointed Environmental Control Officer (ECO).

7 COMMENCEMENT OF THE ACTIVITY

7.1 This activity must commence within a period of three (3) years from the date when the EA was issued. If commencement of the activity does not occur within that period, the EA lapses and a new application for EA must be made in order for the activity to be undertaken. Any request for extension of the validity period of the EA must be lodged with the Department at least 60 days before the expiry date of the EA.

7.2 According to the Soil and Land Capability Study undertaken by Terra-Africa Consult cc dated November 2011 and attached as Appendix 5 in volume 1 of the EIAR, routine fertility analysis must be conducted prior to planting or seeding to create growing conditions that are suitable for plant growth. Furthermore, gradient of slopes should be planned in such a way that the runoff water will not cause wash ways after rehabilitation.

7.3 According to the Biodiversity Action Plan (BAP) undertaken by AGES dated November 2011 and attached as Appendix 8 in volume 2 of the EIAR, riparian zones must be left undisturbed and landscaping must be undertaken by using indigenous species endemic to the area. Additional mitigation measures as outlined on table 29 of the BAP must be complied with in order to protect the biodiversity of the affected areas.

7.4 Unless the necessary permission is granted by the Department of Agriculture, Fisheries and Forestry (DAFF) in terms of the National Forests Act, 1998, (Act no. 84 of 1998), protected plant species such as Sclerocarya birrea must not be removed.

7.5 Trees that are protected in terms of the Limpopo Environmental Management Act, 2003 (Act No 7 of 2003) and in terms of the National Forest Act, 1998 (Act No 84 of 1998) may not be removed or damaged without a permit in that regard.

7.6 All animals such as birds protected under the Limpopo Environmental Management Act, 2003 (Act no. 7 of 2003) are not allowed to be killed or trapped on site unless a permit is obtained from this Department.

7.7 Construction activities must be suspended and a representative of the South African Heritage Resources Agency (SAHRA) be contacted immediately in the event of finding or uncovering any subterranean features / resources such as graves, beyond features indicated in the report.

7.8 All heritage resources found on site, i.e. the Iron Age remains, the middle Stone Age site and the graveyard must not be affected (altered, removed or demolished) by any activities before a permit which authorises such an impact has been issued by SAHRA.

7.9 Dust and nuisance to existing residents must be minimised through dampening of un-surfaced roads, and construction vehicles must avoid travelling unnecessarily through private land.

7.10 An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate avoidance, reduction, recycling, re-use and disposal where appropriate. Uncontaminated builders' rubble generated during the construction can be re-used as back filling material on site. Ensure that no refuse or builders rubble generated on the premises is placed, dumped or deposited on adjacent properties or public places and open spaces during or after construction.

7.11 The applicant, contractors and sub-contractors working on the site must ensure that oil, fuel and chemicals are confined to specific and secured areas throughout the construction period. These materials must be stored in a bunded area with adequate containment (at least 1.5 times the volume of fuel) for potential spills and leaks.

7.12 Construction vehicles must be serviced and maintained in a manner whereby excessive smoke and noise production is reduced to acceptable levels, and to prevent oil leaks. Contaminated soil must be remediated or removed to an authorised landfill site such as Holfontein.

7.13 Residents on the property and surrounding area must be informed if any unusually noisy activities are planned. Noise impacts must be reduced over distance at a rate of 1db (decibel) per 13 metres.

7.14 Outdoor lightning must point inward towards the facility except for nocturnal aviation lights. It must be low and yellow intensity globes used.

7.15 Removal of vegetation must be restricted to the mining area, especially where mining infrastructure will be located. This vegetation must be used to reduce visual scarring of the landscape and potentially reduce visual impact of the mined area.

7.16 Chemical sanitation facilities or systems such as "toilets" that do not rely on seepage of liquids must be provided with a ratio of one for every 15 workers. These must be placed such that they prevent spills or leaks to the environment and must be maintained according to operating instructions and the contents thereof must be disposed of at an authorised sewage works.

7.17 To ensure that noise does not constitute a disturbance during construction, the construction process may only take place between the hours of 8h00 and 17h00 on weekdays and Saturdays, and no construction activities are allowed on Sundays and public holidays.

8 OPERATION OF THE ACTIVITY

8.1 Hauling routes for construction vehicles and machinery must be clearly marked and appropriate signalling must be posted to that effect. Further, movement of construction vehicles and machinery must be restricted to areas outside of the drainage line/wet area.

8.2 Appropriate notification signs must be erected at the construction site, warning the residents and visitors about the hazards around the construction site and presence of heavy vehicles and machinery.

8.3 Appropriate training and protective clothing and/or equipment must be provided and worn and/or used at all time within all operational areas of the project. Should the clothing and or equipment need to be disposed, there should be disposed at an authorised registered landfill.

8.4 The hydraulic fluids or hazardous chemicals required must be stored in a concrete lined surface with bund walls and shall be designed in such a manner that any spillage can be contained and reclaimed without any impact on the surrounding environment.

8.5 The contractor must remove all topsoil from the designated sites, and stockpile it in berms (piles) no greater than 1.5m in height.

8.6 The stockpiles must not be compacted in any way and must be vegetated with an indigenous grass seed to main fertility.

8.7 Waste asphalt material produced during operational phase must be recycled and/or made available to the local communities for upgrading of private roads.

8.8 Ensure that no refuse generated on the premises is placed, dumped or deposited on adjacent properties or public places and open spaces during or after construction.

8.9 The current dust fallout monitoring network must be maintained, and daily monitoring system must be implemented in order to the outputs of the monitoring system are able to provide accurate data for enhanced acceptable levels of dust emission.

8.10 The hydraulic fluids must be placed such that they prevent spills or leaks to the environment and must be maintained according to operating instructions and the contents thereof must be disposed of at an authorised area.

8.11 Regular training as per Occupational Health and Safety Act, 1993 (Act 85 of 1993) should be conducted to ensure that all staff is aware of the safety measures as well as the potential environmental hazards associated with their daily activities.

9 SITE CLOSURE AND DECOMMISSIONING

9.1 Should the activity ever cease or become redundant, the applicant shall undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at that time.

9.2 All future waste rock produced during the underground operations must be utilised during concurrent rehabilitation of the coarse residue deposit and fine residue deposit.

9.3 Removal and management of the alien vegetation must from part of the concurrent rehabilitation activities and occur on a regular basis throughout the life of the mine.

10 ENVIRONMENTAL COMMITMENT BY DE BEERS CONSOLIDATED MINES

10.1 De Beers Consolidated Mines must contribute to the development of Strategic Environmental tools, programmes and projects within the Local Authorities adjacent to the Mine. This contribution could be in different forms e.g. financial, technical and provision of information as agreed upon with the Department.

2012 -07- 13

P.O. BOX 55464, POLOKWANE 0700
TEL. 015 291 [illegible]
LIMPOPO PROVINCE

11 GENERAL

11.1 A copy of this EA must be kept at the property / on-site office where the activity (ies) will be undertaken. The EA must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the EA who works or undertakes work at the property.

11.2 Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.

11.3 National government, provincial government, local authorities or committees appointed in terms of the conditions of this EA or any other public authority shall not be held responsible for any damages or losses suffered by the applicant or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of EA as set out in this document or any other subsequent document emanating from these conditions of authorisation.

SENIOR GENERAL MANAGER
ENVIRONMENT AND TOURISM
DATE: 13/07/2012

DEPARTMENT OF ECONOMIC DEVELOPMENT
ENVIRONMENT & TOURISM
ENVIRONMENTAL IMPACT MANAGEMENT
2012 -07- 13
P.O. BOX 55464, POLOKWANE 0700
TEL: 015 291 1
LIMPOPO PROVINCE

ANNEXURE 1: REASONS FOR THE DECISION

1 BACKGROUND

The application from the applicant (De Beers Consolidated Mines (Pty) Limited) is for Government Notices R. 544, R. 545 and R. 546 of 18 June 2010 activities. The following activities are being applied for:

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Activity number and Listing Notice	**Activity description**
Activity no 3 of Government Notice R. 545 of 18 June 2010	"The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres"
Activity no 5 of Government Notice R. 545 of 18 June 2010	"The construction of facilities or infrastructure for any process or activity which requires a permit or license in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent and which is not identified in Notice No. 544 of 2010 or 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 that Act will apply"
Activity no 6 (ii) of Government Notice R. 545 of 18 June 2010	"The construction of facilities or infrastructure for the bulk transportation of dangerous goods – (v) in liquid form, outside an industrial complex, using pipelines, exceeding 1000 metre in length, with a throughput capacity of more than 50 cubic metres per day"
Activity no 15 of Government Notice R. 545 of 18 June 2010	"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 hectares 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 19 of Government Notice R. 545 of 18 June 2010	"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 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more"

Activity number and Listing Notice	**Activity description**
Activity no 2 (iii) (ff) of Government Notice R. 546 of 18 June 2010	"The construction of a reservoirs for bulk water supply with a capacity of more than 250 cubic metres"
Activity no 10 (ii) (gg) of Government Notice R. 546 of 18 June 2010	"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 cubic metres"
Activity no 16 (iii) (iv) of Government Notice R. 546 of 18 June 2010	"The construction of – (vi) buildings with a footprint exceeding 10 square metres in size; or (vii) infrastructure covering 10 square metres or more"
Activity no 23 of Government Notice R. 546 of 18 June 2010	"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 cubic metres or more but less than 80 cubic metres"
Activity no 24 (c) (d) of Government Notice R. 546 of 18 June 2010	"The expansion of (h) buildings where the buildings will be expanded by 10 square metres or more in size; or (i) infrastructure where the infrastructure will be expanded by 10 square metres or more" where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line"
Activity no 26 of Government Notice R. 546 of 18 June 2010	"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"

The proposed activity entails the establishment of underground mining operations at an existing Venetia Mine, located on the farm Venetia 103 MS, located approximately 80km west of Musina and 40km south-east of Alldays Township, within the jurisdiction of Musina Local Municipality of Vhembe District in the Limpopo Province.

The applicant appointed Environmental Resources Management – ERM (represented by Ms Kate Stuart Williams) to undertake the Scoping and Environmental Impact Reporting process as required by Regulation 16 of the EIA Regulations, 2010.

2 INFORMATION CONSIDERED IN MAKING THE DECISION

In reaching its decision, the Department took, *inter alia*, the following into consideration:

a) The information contained in the amended application form and the amended final EIAR received by the Department on 05 June 2012 and 15 June 2012 respectively;

b) The following specialist studies were undertaken as part of the Environmental Impact Assessment (EIA) process:

- Noise Impact Study undertaken by Francois Malherbe Acoustic Consulting CC dated October 2011 and attached as Appendix 2 in volume 1 of the EIAR;
- Visual Impact Assessment undertaken by SRK Consulting dated October 2011 and attached as Appendix 3 in volume 1 of the EIAR;
- Air Quality Study undertaken by SRK Consulting dated October 2011 and attached as Appendix 4 in volume 1 of the EIAR;
- Soil and Land Capability Study undertaken by Terra-Africa Consult cc dated November 2011 and attached as Appendix 5 in volume 1 of the EIAR;
- Surface Water Inputs Study undertaken by E-TEK Consulting and Golder Associates dated October 2011 and attached as Appendix 6 in volume 1 of the EIAR;
- Groundwater Specialist Study undertaken by SRK Consulting dated November 2011 and attached as Appendix 7 in volume 1 of the EIAR;
- Biodiversity Action Plan undertaken by AGES dated November 2011 and attached as Appendix 8 in volume 2 of the EIAR;
- Archaeological Impact Assessment (Phase 1) undertaken by Dr Julius CC Pistorius dated March 2011 and attached as Appendix 9 in volume 2 of the EIAR;
- Socio-economic Baseline Study and Impact Assessment undertaken by De Beers Limited dated November 2011 and attached as Appendix 10 in volume 2 of the EIAR;
- Baseline Geochemical Investigation undertaken by ERM dated 12 January 2012 and attached as Appendix 11 in volume 2 of the EIAR;
- Strategic Preliminary Closure Plan for Venetia Mine undertaken by E-TEK Consulting and Golder Associates dated May 2011 and attached as Appendix 12 in volume 2 of the EIAR;
- Conceptual Closure Plan for Venetia Mine undertaken by E-TEK Consulting dated November 2011 and attached as Appendix 13 in volume 2 of the EIAR; and
- Venetia Mine Dynamic Water Balance Study undertaken by Golder Associates dated December 2011 and attached as Appendix 14 in volume 2 of the EIAR.

c) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);

d) A detailed Environmental Management Programme (EMPr) attached as a separate Appendix 1 to the amended EIAR;

e) Findings of the site inspection conducted on 31 May 2012 by Ms T. L. Tshuketana of this Department.

3 KEY FACTORS CONSIDERED IN MAKING THE DECISION

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

a) The nature of the proposed site (existing mining activities) and proposed activity (expansion of existing mining activities by establishing underground operations).

a) A sufficient Public Participation Process (PPP) was undertaken and the applicant has satisfied the minimum requirements as prescribed in the EIA regulations, 2010 for public involvement.

b) The possible impacts relevant to the proposed activity can be mitigated using the recommendations outlined in the approved EMPr and the amended EIAR compiled by Environmental Resources Management – ERM and received by the Department on 15 June 2012 to ensure prevention and minimal impacts on the receiving environment.

c) Relevant mitigation measures for the pre-construction, construction and rehabilitation phases of the development were proposed and included in the approved EMPr and the amended EIAR and will be implemented to manage the identified environmental impacts during the project life cycle.

d) The proposed development will be located within a developed area. Therefore, the proposed development will not significantly alter the sense of place of the surrounding area.

e) According to the Noise Impact Study undertaken by Francois Malherbe Acoustic Consulting CC dated October 2011 and attached as Appendix 2 in volume 1 of the EIAR, the present ambient noise levels on the boundary of the Venetia Mine is far below the 70dBA listed by SANS 10103 as typical for industrial areas / or districts. Therefore, the proposed underground operations are not foreseen to could significantly contribute to the increased noise levels in and around the mine. For all investigated scenarios, i.e. present open cast mining operations, construction and operation of the future underground mine, the significance rating of the noise impact is medium to low.

f) According to the Visual Impact Assessment undertaken by SRK Consulting dated October 2011 and attached as Appendix 3 in volume 1 of the EIAR, natural vegetation will be retained wherever possible on the site. Vegetation will be used to reduce visual scarring of the landscape and potentially reduce visual impact of the mined area. Management guidelines as outlined in table 12.1 for visual impact must be complied with.

g) According to the Air Quality Study undertaken by SRK Consulting dated October 2011 and attached as Appendix 4 in volume 1 of the EIAR, the current dust fallout monitoring network are recommended to be maintained, and periodic independent audits of monitoring systems and implementation of management will be conducted in order to ensure that the system is maintained and the outputs of the monitoring system are able to provide suitable data for enhanced decision-making.

h) According to the Surface Water Inputs Study undertaken by E-TEK Consulting and Golder Associates dated October 2011 and attached as Appendix 6 in volume 1 of the EIAR, poor quality water was recorded for the Venetia Dump and Krone Dump Seepage including the FRD. Therefore, the water should not be allowed to flow into the environment since it could pose downstream contamination of rivers/streams.

i) According to the Groundwater Specialist Study (GSS) undertaken by SRK Consulting dated November 2011 and attached as Appendix 7 in volume 1 of the EIAR, the proposed groundwater monitoring points as outlined in table 27 of the GSS will be applied in order to minimise groundwater contamination.

j) According to the Archaeological Impact Assessment (Phase 1) undertaken by Dr Julius CC Pistorius dated March 2011 and attached as Appendix 9 in volume 2 of the EIAR, the graves identified falls outside the proposed mining area. Therefore, no other objects of archaeological importance were identified within the proposed mining area. However, in the event of finding or uncovering any subterranean features / resources such as middens, graves, etc., mining activities must be suspended and a representative of the South African Heritage Resources Agency (SAHRA) be contacted immediately.

k) According to the Baseline Geochemical Investigation undertaken by ERM dated 12 January 2012 and attached as Appendix 11 in volume 2 of the EIAR, the risk of acid rock drainage is minimal.

l) Details provided of the qualifications of the EAP indicate that the EAP is competent to carry out the environmental impact assessment procedures.

4 FINDINGS

After consideration of the information and factors listed above, the Department made the following findings -

a) The Public Participation Process (PPP) was undertaken and the applicant has satisfied the minimum requirements as prescribed in the EIA regulations, 2010 for public involvement and the details are as follows:

- The project was advertised in two editions of local Newspapers (Limpopo Mirror and Zoutpansberger) in English, Afrikaans and Tshivenda on 19 November 2010, 04 November 2011;

- A public meeting was held on 07-08 December 2010 at Venetia Mine and Alldays respectively, and all the issues raised by interested and affected parties were responded to; and

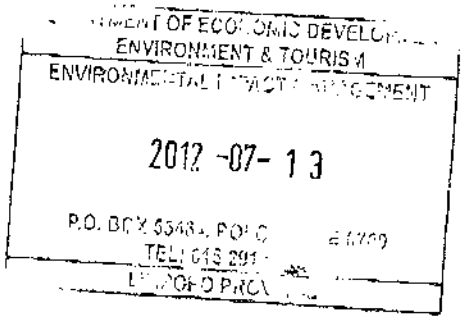
- All the possible impacts relevant to the proposed activity can be mitigated using the recommendations outlined in the approved EMPr and the amended EIAR compiled by Environmental Resources Management (ERM) and received by the Department on 15 June 2012 to ensure prevention and minimal impacts on the receiving environment.

b) According to the findings of the site inspection undertaken by Ms T. L. Tshuketana on 31 May 2011:

- The proposed underground mining operations will be undertaken within an existing mining lease for Venetia Mine;
- There are access roads to the proposed site of development;
- Adjacent to the existing Venetia mine is the Venetia Limpopo Nature Reserve (VLNR);
- The proposed development will be located within a developed area. Therefore, the proposed development will not significantly alter the sense of place of the surrounding area; and
- Approval of the expansion activities will generate additional employment opportunities for the residents of Alldays, Musina and the surrounding areas.

c) All the possible impacts relevant to the proposed activity can be mitigated using the recommendations outlined in the approved EMPr and the amended EIAR compiled by Environmental Resources Management (ERM) and received by the Department on 15 June 2012 to ensure prevention and minimal impacts on the receiving environment.

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the EA, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels. The authorisation is accordingly granted.



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

Enquiries: Kubaye TA **Tel**: 015 290 7164 **Fax**: 015 295 5015 **E-Mail**: KubayeTA@ledet.gov.za **Ref no.**: 12/1/9/2-V9

De Beers Consolidated Mines Limited
P O Box 668
MUSINA
0900

Attention: Mr. Ludwig von Maltitz **Fax:** 015 575 2377

AMENDMENTS OF THE ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED UNDERGROUND OPERATIONS AND ENVIRONMENTAL MANAGEMENT PLAN (EMP) CONSOLIDATION FOR EXISTING OPERATIONS AT DE BEERS CONSOLIDATED MINES, VENETIA MINE WITHIN MUSINA LOCAL MUNICIPALITY OF VHEMBE DISTRICT IN THE LIMPOPO PROVINCE

1. The application for amendment of an Environmental Authorisation (EA) issued on 13 July 2012 in respect of the proposed underground operations and EMP consolidation for existing operations at De Beers consolidated mines at Venetia Mine within Musina Local Municipality of Vhembe District, received on 12 December 2014 have reference.

2. The Department has reviewed the application for amendment of EA and decided to grant De Beers Consolidated Mines Limited such amendments as follows:

   2.1 Condition 1.2 is amended to read:

   Should the authorised development trigger activities that are listed in section 21 of the National Environmental Management: Air Quality Act, an Atmospheric Emissions Licence must be obtained prior the commencement of such activities;

   2.2 The following conditions are removed:
   - 1.3,
   - 3.6,
   - 7.17,
   - 8.5,
   - 3.11.5 and
   - 7.3.

   2.3 Condition 1.6 is amended to insert Mine Health and Safety Act, 1996 (Act 29 of 1996);

   2.4 Condition 5.1 is amended to read:

   De Beers Consolidated Mines Limited must prepare and submit compliance monitoring or environmental audit report as stipulated in an EMP on an annual basis. The report must indicate the applicant's compliance status with regard to the conditions of the EA and must be submitted to the Department.

2.5 Condition 5.3 is amended to read:

The applicant must ensure that an up to date emergency log is kept during both construction and operational phases. The emergency log must be made available upon request by the Department;

2.6 Condition 7.11 is amended to read:

The applicant, contractors and sub-contractors working on the site must ensure that oil, fuel and chemicals are confined to specific and secured areas throughout the construction period. These materials must be stored in bunded areas that comply with legislation and standards governing aboveground storage of petroleum products;

2.7 Condition 8.9 is amended to read:

The current dust fallout monitoring network must be maintained, and a monthly monitoring system must be implemented in order for the outputs of the monitoring system to be able to provide accurate data for the enhanced acceptable levels of dust emission; and

2.8 Condition 8.11 is amended to:

Regular training as per Mine Health and Safety Act, 1996 (Act No. 29 of 1996) should be conducted to ensure that all staff are aware of the safety measures as well as the potential environmental hazard associated with the daily activities.

3. All other conditions in the EA already issued for this project on 13 July 2012 are still legitimate and must be adhered to.

4. All the interested and/or affected parties registered for this project must be notified about the amendment and the conditions it is subject to, within 14 days of signature of this letter.

5. In light of the above, the Department is satisfied that, subject to compliance with the conditions contained in this letter and the EA issued on 13 July 2012, the proposed activity will not conflict with the general objectives of Integrated Environmental Management laid down in Chapter 5 of National Environmental Management Act, 1998 (Act 107 of 1998) and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels. The request is accordingly granted.

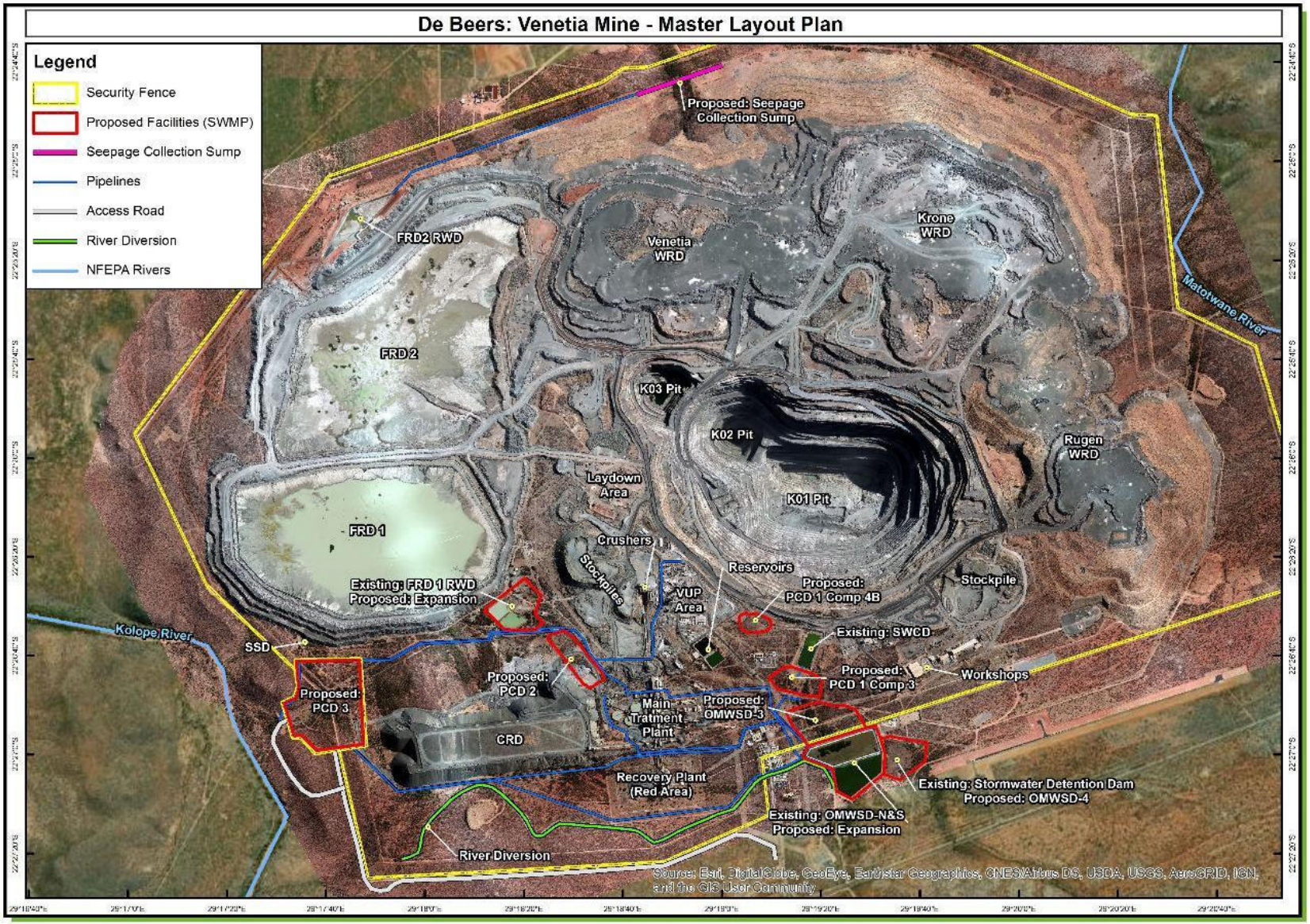
Should have any queries regarding this correspondence, please do not hesitate to contact the Department.

Yours faithfully

SENIOR GENERAL MANAGER:
ENVIRONMENT AND TOURISM
DATE: 5/2/2015

Cc: Environmental Resources Management (Pty) Ltd **Att:** Ms. K de Courcy Hamilton **Fax:** 011 804 2289

APPENDIX 4 – LAYOUT MAP



APPENDIX 5 - PROOF OF PAYMENT

NEDBANK

Proof of payment

Date: 17/06/2021 Time: 11:14:40 AM

Profile name:	SHANGONI MANAGEMENT SERVICES (PTY) LTD
Payment reference number:	000000003058919388
Payment date:	17/06/2021
Payment capture date:	17/06/2021
Payment authorise date and time:	17/06/2021 11:14:35 AM
From account name:	SHANGONI MANAGEMENT SERVICES (
From account description:	SHANGONI MANAGEMENT SERVICES (PTY) LTD
From account statement description:	Pietersburg Limpopo sub Dep
Beneficiary account number:	4059160603
Beneficiary/ Recipient name:	Pietersburg Limpopo sub Dep
Beneficiary statement description:	LP/30/5/1/3/2/1 (58)EM
Branch code:	632005
Amount:	10,000.00

Additional comments by payer:

View your account to **confirm that you have received this payment.**

- All payments are subject to clearing rules.

Please refer to landing page for cut off times and telephone numbers.

APPENDIX 6 – DEA SCREENING REPORT

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE ENVIRONMENTAL SENSITIVITY

EIA Reference number: LP/30/5/1/3/2/1 (58) EM

Project name: Storm Water Management Project

Project title: Storm Water Management Project

Date screening report generated: 17/06/2021 09:32:44

Applicant: De Beers Venetia Mine

Compiler: Ashley Miller

Compiler signature:

.....

Application Category: Services|Water services|Storage|Dams

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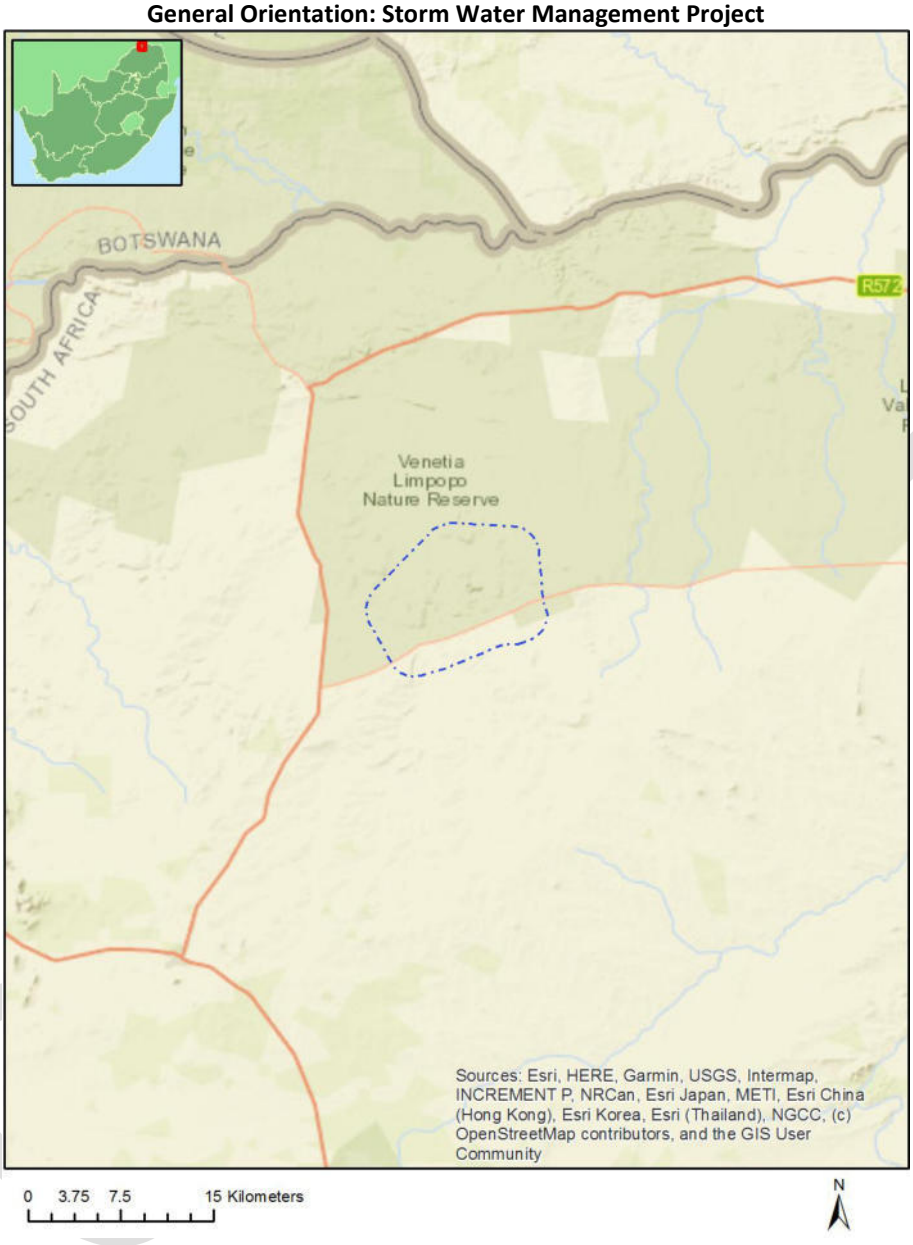
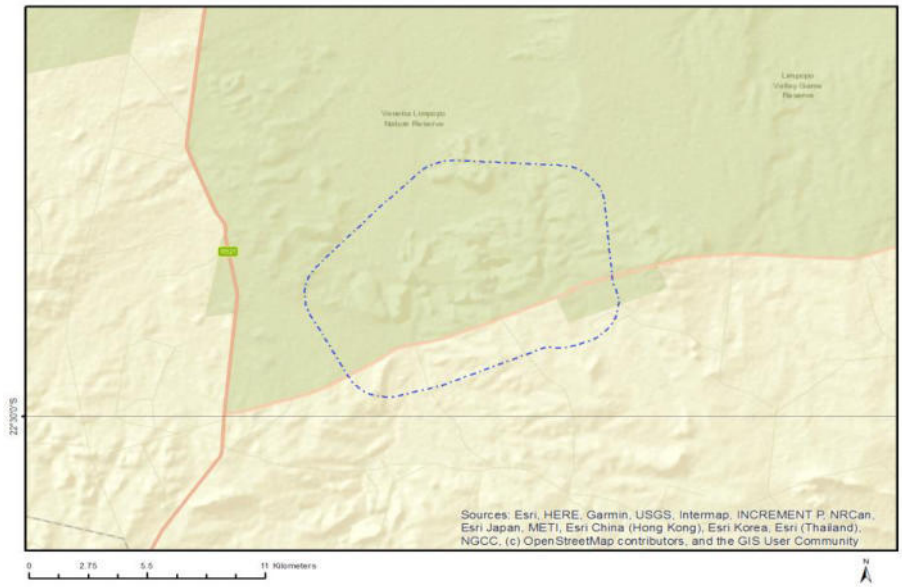
Proposed Project Location

Orientation map 1: General location

General Orientation: Storm Water Management Project



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	COREA	96	0	22°28'27.3S	29°13'31.05E	Farm
2	KAAL KRAAL	100	0	22°29'59.44S	29°16'43.9E	Farm
3	ELESGER	98	0	22°25'46.26S	29°16'27.49E	Farm
4	DRUMSHEUGH	99	0	22°27'38.02S	29°16'15.08E	Farm
5	RUGEN	105	0	22°27'10.78S	29°22'12.09E	Farm
6	GOTHA	102	0	22°28'49.89S	29°19'45.51E	Farm
7	VENETIA	103	0	22°26'39.36S	29°18'37.83E	Farm
8	KRONE	104	0	22°24'31.09S	29°20'29.53E	Farm
9	ENDORA	66	0	22°23'24.99S	29°16'46.69E	Farm
10	ICON	95	0	22°25'56.56S	29°13'47.58E	Farm
11	VENETIA	103	4	22°27'26.24S	29°17'42.23E	Farm Portion
12	KRONE	104	1	22°24'24.35S	29°19'47.28E	Farm Portion
13	VENETIA	103	0	22°25'40.08S	29°18'16.53E	Farm Portion
14	KRONE	104	0	22°24'44.18S	29°21'51.56E	Farm Portion
15	ENDORA	66	1	22°23'42.52S	29°17'20.71E	Farm Portion
16	GOTHA	102	0	22°28'49.89S	29°19'45.51E	Farm Portion
17	VENETIA	103	1	22°26'54.54S	29°19'58.42E	Farm Portion
18	KAAL KRAAL	100	0	22°29'23.79S	29°17'2.38E	Farm Portion
19	DRUMSHEUGH	99	0	22°27'38.02S	29°16'15.08E	Farm Portion
20	RUGEN	105	2	22°27'38.81S	29°23'17.25E	Farm Portion
21	VENETIA	103	5	22°26'36.75S	29°18'18.47E	Farm Portion
22	RUGEN	105	0	22°26'22.18S	29°21'40.6E	Farm Portion
23	RUGEN	105	1	22°28'14.95S	29°22'7.26E	Farm Portion
24	ICON	95	0	22°25'56.56S	29°13'47.58E	Farm Portion
25	COREA	96	0	22°28'20.66S	29°13'56.72E	Farm Portion
26	ELESGER	98	0	22°25'46.26S	29°16'27.49E	Farm Portion
27	VENETIA	103	3	22°27'45.2S	29°18'2.65E	Farm Portion
28	VENETIA	103	2	22°26'14.61S	29°19'28.04E	Farm Portion

Development footprint[1] vertices:
No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/2/551	Solar PV	Approved	0
2	14/12/16/3/3/2/329	Solar PV	Approved	0

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: **Services|Water services|Storage|Dams**.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

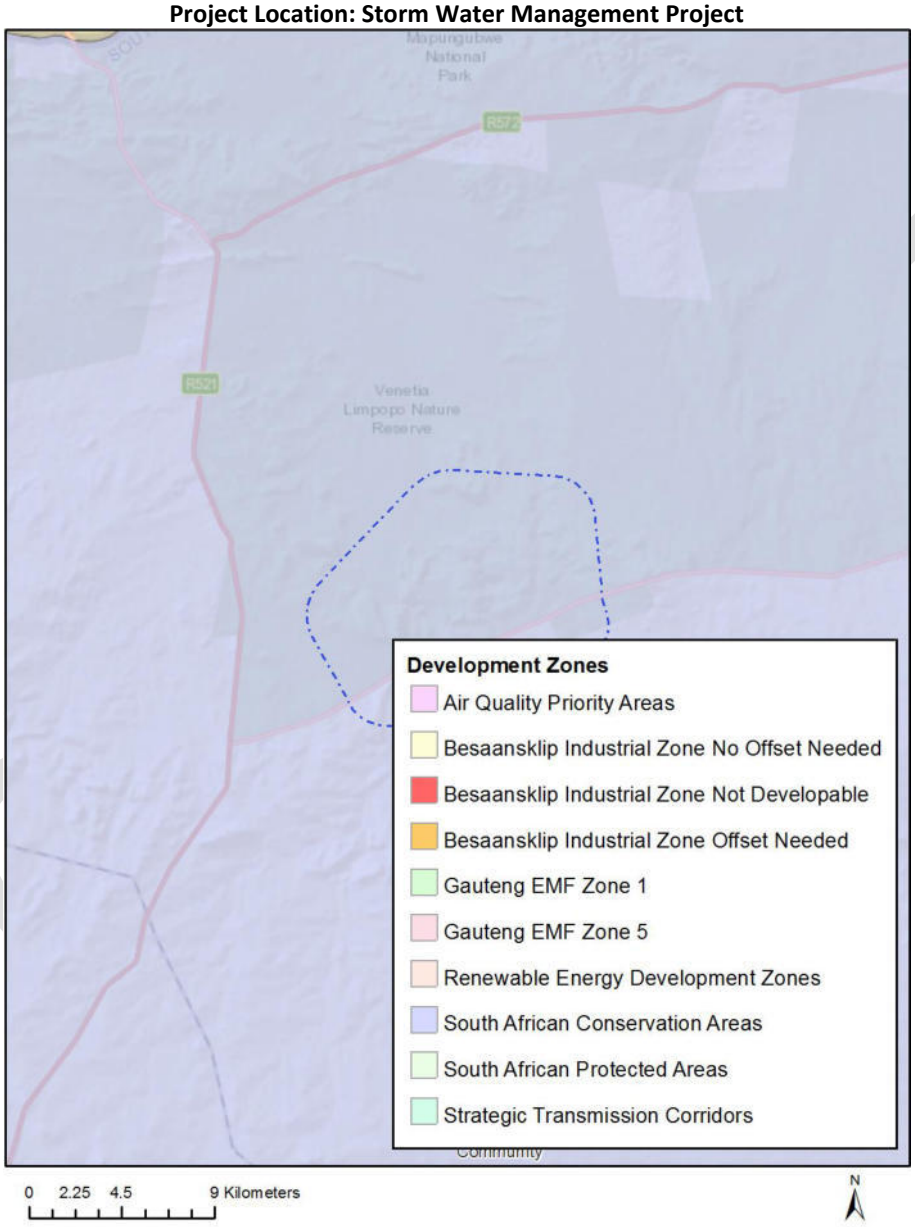
Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-International corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/GN113 16 February 2018.pdf
South African	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SAPA

[1] "development footprint", means the area within the site on which the development will take place and incudes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Protected Areas	D_OR_2020_Q4_Metadata.pdf
South African Conservation Areas	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SACAD_OR_2020_Q4_Metadata.pdf

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

Project Location: Storm Water Management Project



Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the

proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme		X		
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme				X
Paleontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

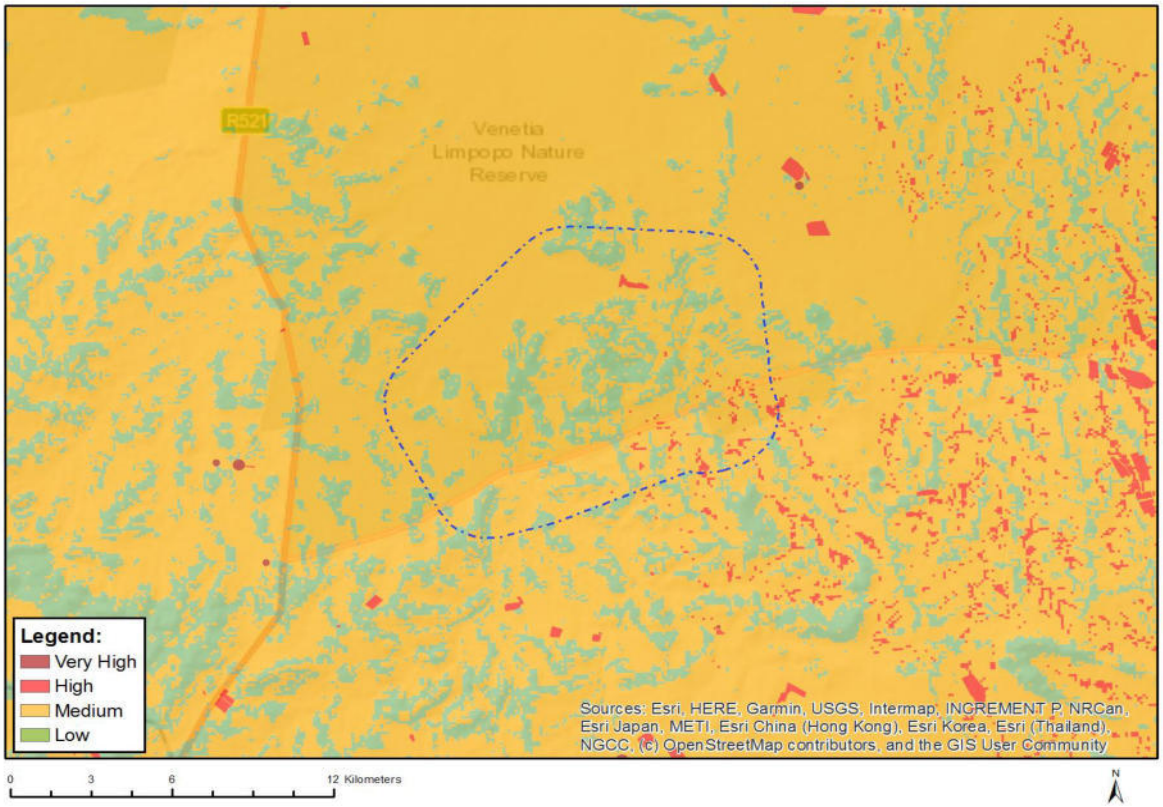
No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
5	Terrestrial Biodiversity Impact	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf

	Assessment	
6	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
7	Hydrology Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
9	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
10	Seismicity Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
11	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
12	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

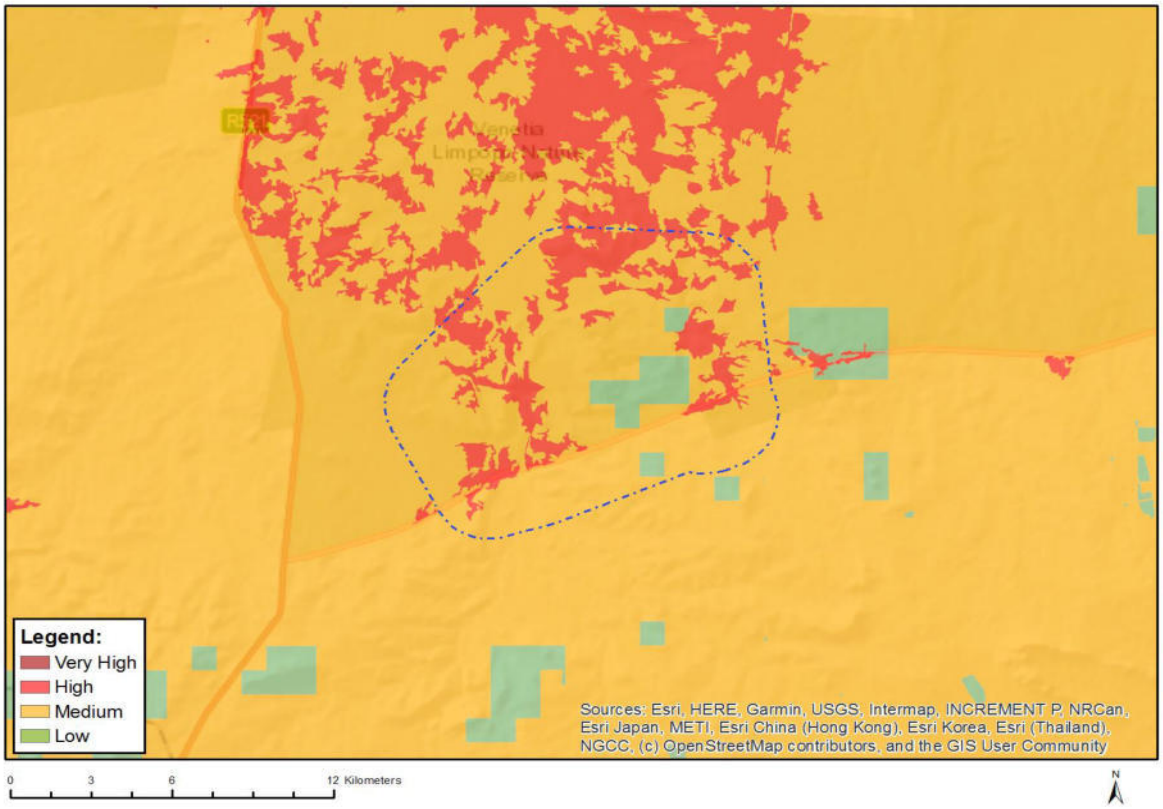


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Old Fields;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



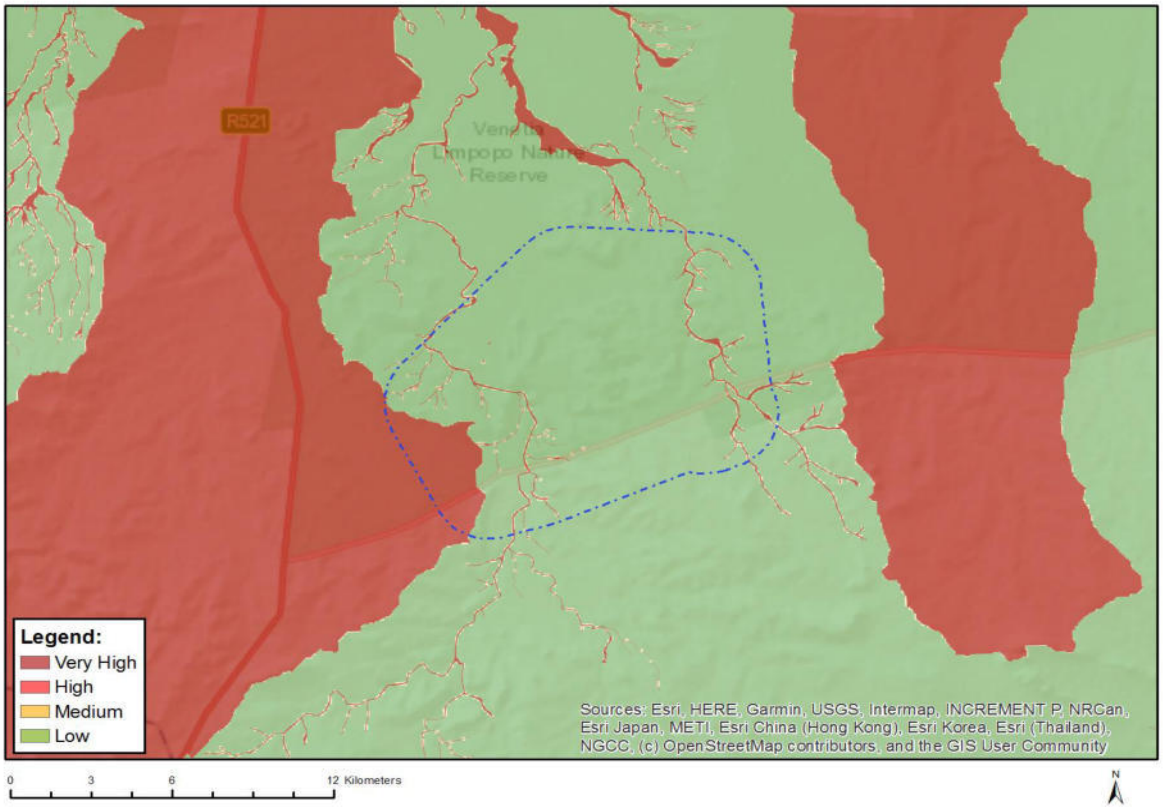
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Mammalia-Lycaon pictus
High	Mammalia-Acinonyx jubatus
High	Mammalia-Panthera leo
High	Mammalia-Smutsia temminckii
High	Mammalia-Hippopotamus amphibius
High	Mammalia-Loxodonta africana
Low	Low sensitivity
Medium	Mammalia-Lycaon pictus
Medium	Insecta-Anthene minima minima
Medium	Sensitive species 2
Medium	Mammalia-Dasymys robertsii
Medium	Mammalia-Acinonyx jubatus

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

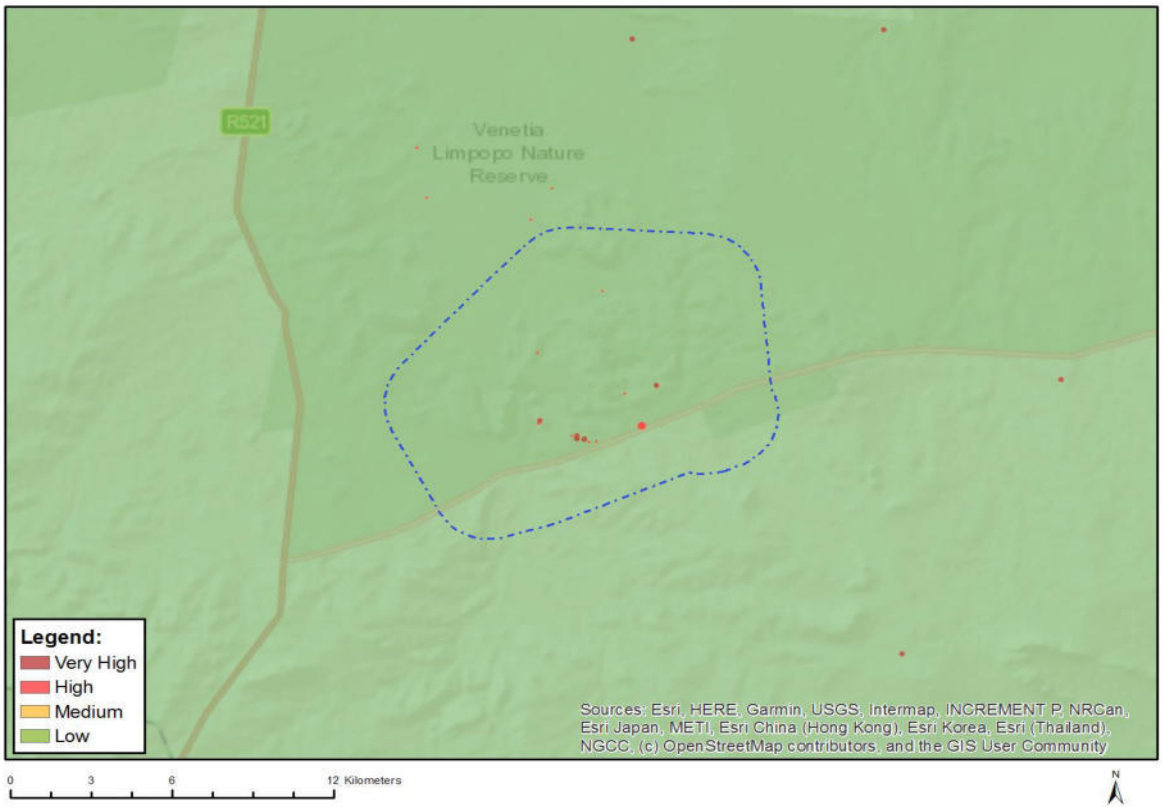


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Wetlands and Estuaries
Very High	Freshwater ecosystem priority area quinary catchments

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

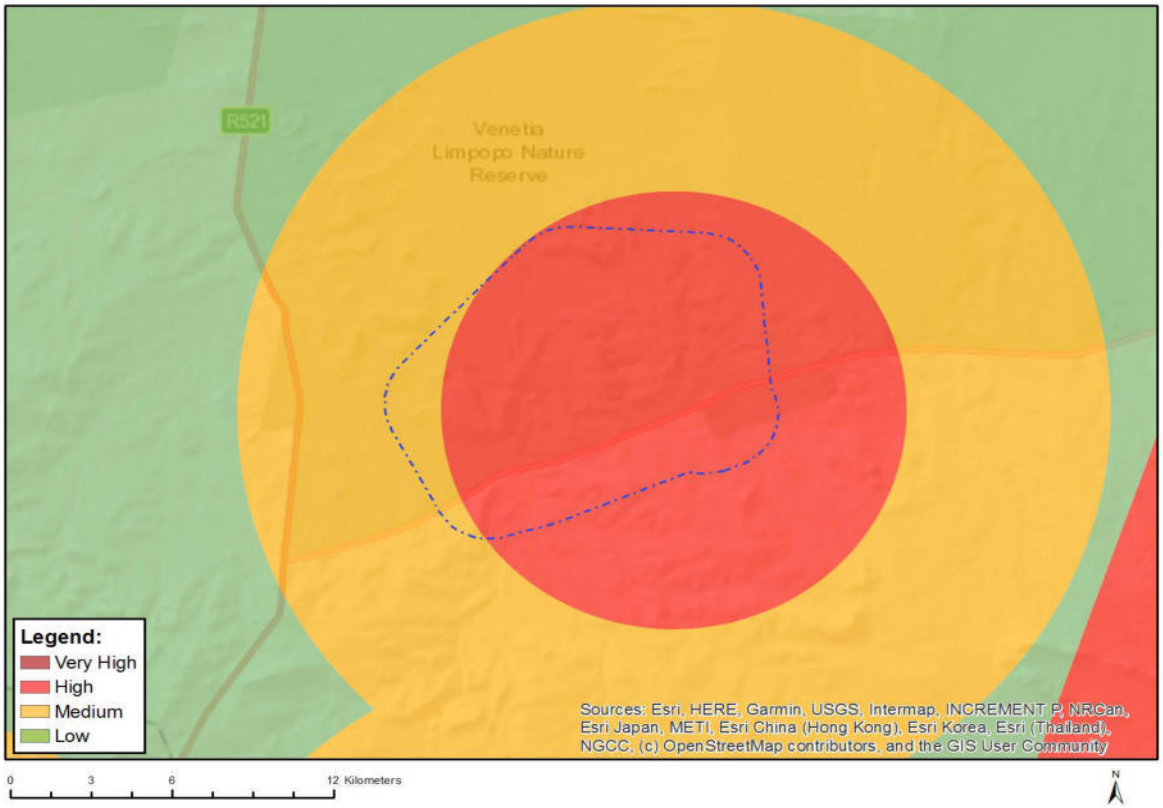


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 150m of a Grade IIIa Heritage site
High	Within 50m of a Grade IIIc Heritage site
Low	Low sensitivity
Very High	Within 100m of an Ungraded Heritage site

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

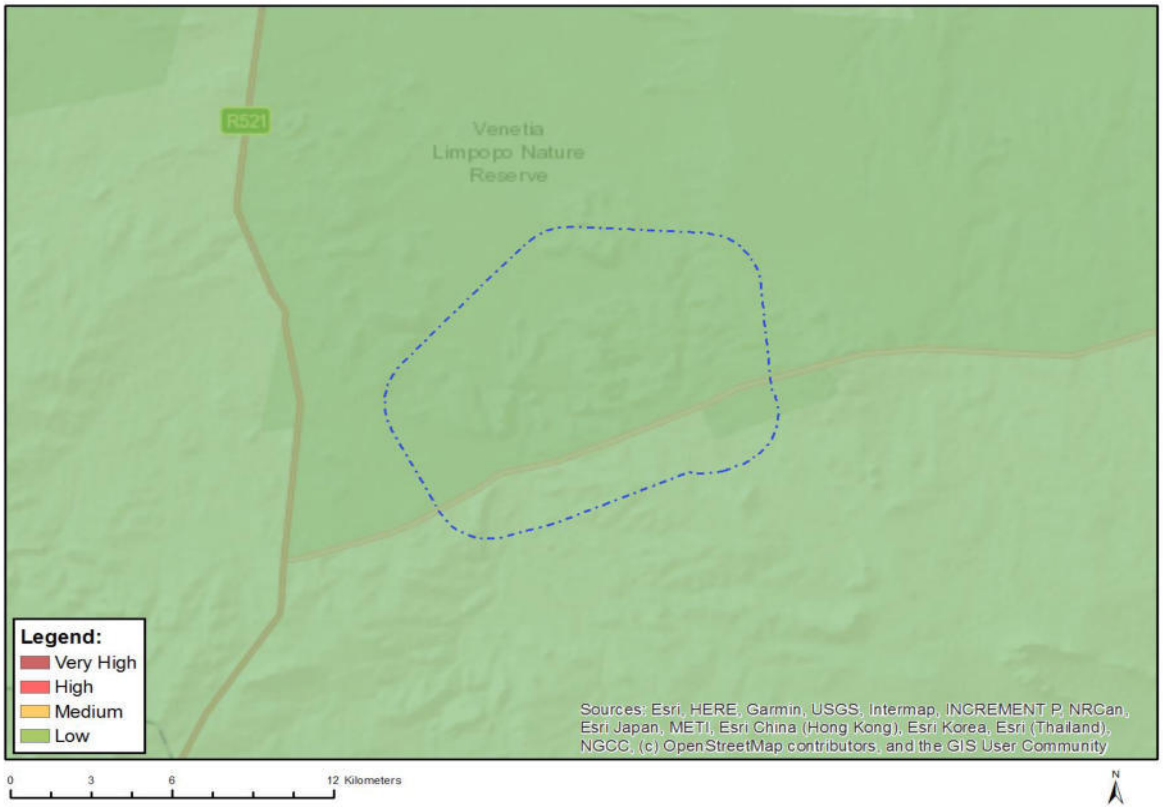


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Within 8 km of other civil aviation aerodrome
Medium	Between 8 and 15 km of other civil aviation aerodrome

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

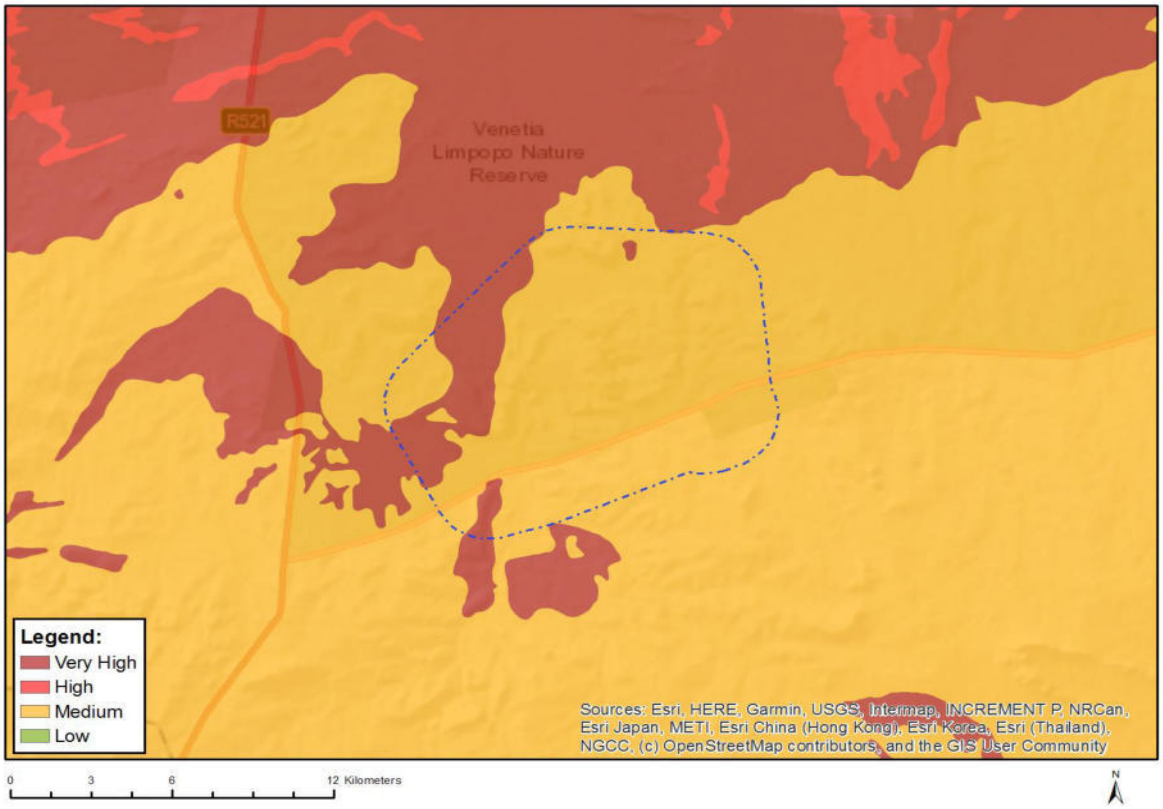


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

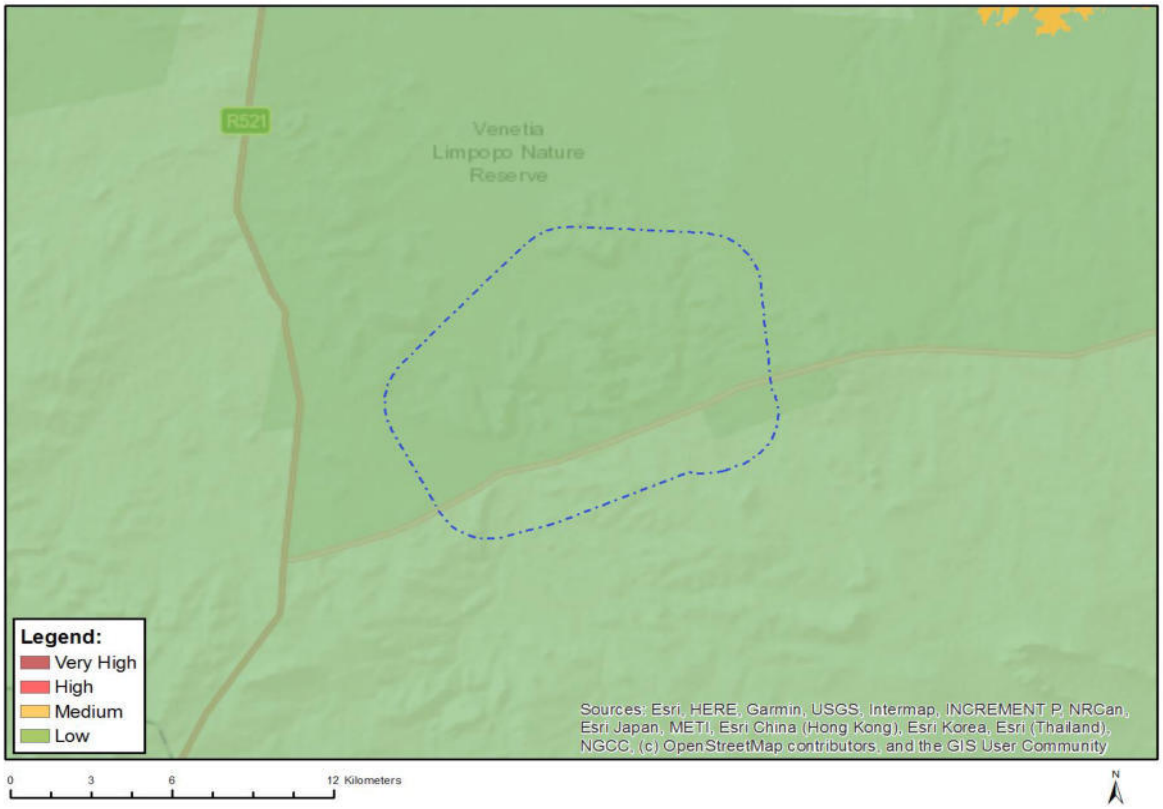


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



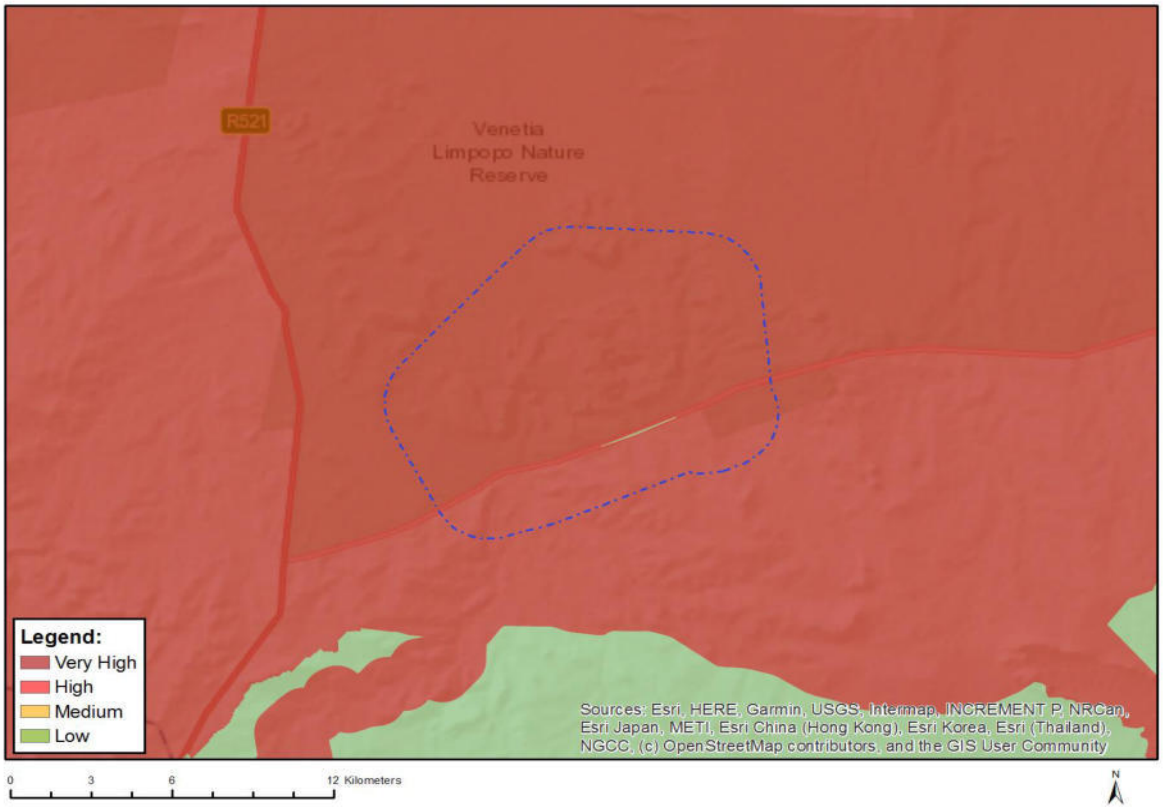
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Critical Biodiversity Area 1
Very High	Critical Biodiversity Area 2
Very High	Ecological Support Area 1
Very High	Ecological Support Area 2
Very High	Freshwater ecosystem priority area quinary catchments
Very High	Focus Areas for land-based protected areas expansion
Very High	South African Protected Areas

Annexure D

Public participation report

(to be compiled and submitted with Final Scoping Report)