

Mn48 (PTY) LTD

BACKGROUND INFORMATION DOCUMENT FOR THE CONSOLIDATION OF THE Mn48 MINING RIGHT AREA AND THE KHWARA MINING RIGHT APPLICATION AREA INCLUDING THE ASSOCIATED ENVIRONMENTAL MANAGEMENT PROGRAMMES AND CHANGES TO THE APPROVED SURFACE INFRASTRUCTURE LAYOUT

SEPTEMBER 2020

INTRODUCTION

Mn48 (Pty) Ltd (previously named Lehating Mining (Pty) Ltd) (Mn48) holds a mining right (MR) and approved Environmental Management Programme report (EMPr) and an Environmental Authorisation (EA) for the development of a new underground manganese mining operation near Black Rock in the Joe Morolong Local Municipality, located in the John Taolo Gaetsewe District Municipality, Northern Cape Province. The approved mine will be located on a portion of Portion 1 of the farm Lehating 741. In February 2020, Mn48 (Pty) Ltd changed its name from Lehating Mining (Pty) Ltd to Mn48 (Pty) Ltd (Mn48) and all references to the company will hereafter be to Mn48.

Immediately adjacent and to the south of Mn48 MR area, Khwara Manganese (Pty) Ltd (Khwara) holds an approved EA for underground mining of manganese and iron ore in, on and under Portion 2 of the farm Wessels 227 and manganese ore in, on and under the Remaining Extent and Portions 3 and 4 of the farm Dibiaghomo 226 (Khwara MR Application Area). The Khwara EA was granted pursuant to Khwara's application for a mining right and an EA in respect of the Khwara MR Application Area. The Khwara MR Application is still being processed by the Department of Mineral Resources and Energy (DMRE). The underground manganese resource in the Khwara MR Application Area will be accessed using Mn48's approved surface infrastructure. In this regard, no surface infrastructure will be established on the properties within the Khwara MR Application Area. Aside from initial site clearing activities, no surface infrastructure has been established to date.

Mn48 is now proposing to consolidate the Mn48 MR area and the Khwara MR Application Area and associated EMPrs and EAs. In addition, the approved layout of surface infrastructure located on a portion of Portion 1 of the farm Lehating 741 needs to be amended to cater for the consolidated operations following the outcome of the Bankable Feasibility Study.

ENVIRONMENTAL AUTHORISATION PROCESS

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

- An amended and consolidated EMPr from the Department of Mineral Resources and Energy (DMRE) in terms of Section 102 of the Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA), as amended;
- An Environmental Authorisation from the DMRE in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended for activities in Listing Notice 1 (GNR 983 of 2014, as amended) and Listing Notice 3 (GNR 985, as amended). The Environmental Impact Assessment Regulations being

followed are Government Notice Regulation (GNR) 982 of 4 December 2014, as amended;

- An Integrated Water Use License (IWUL) from the Department of Human Settlement, Water and Sanitation (DHSWS) in terms of Section 21 of the National Water Act (NWA) (No. 36 of 1998). The Regulations being followed for this project are GNR 267 of 2017 for the Procedural Requirements for WUL Applications; and
- A Waste Management Licence from the DMRE in terms of the National Environmental Management: Waste Act (No. 59 of 2008) (NEM:WA) for activities in Category A (GNR 921 of 2013).

PURPOSE OF THIS DOCUMENT

This document has been prepared by SLR to inform you about:

- The proposed project;
- The baseline environment of the project area;
- The environmental authorisation process being followed;
- Possible environmental/cultural/socio-economic impacts; and
- How you can have input into the environmental authorisation process.

SLR Consulting (South Africa) (Pty) Ltd (SLR), an independent firm of environmental consultants, has been appointed to manage the environmental authorisation process.

YOUR ROLE

You have been identified as an interested and/or affected party (I&AP) who may want to be informed about the proposed project and have input into the environmental authorisation process and reports.

You have an opportunity to review this document and to provide your initial comments to SLR for incorporation in the environmental authorisation process. You will also be given the opportunity to review and comment on the Basic Assessment Report (BAR). All comments will be recorded and included in the reports submitted to the DMRE for decision-making.

HOW TO RESPOND

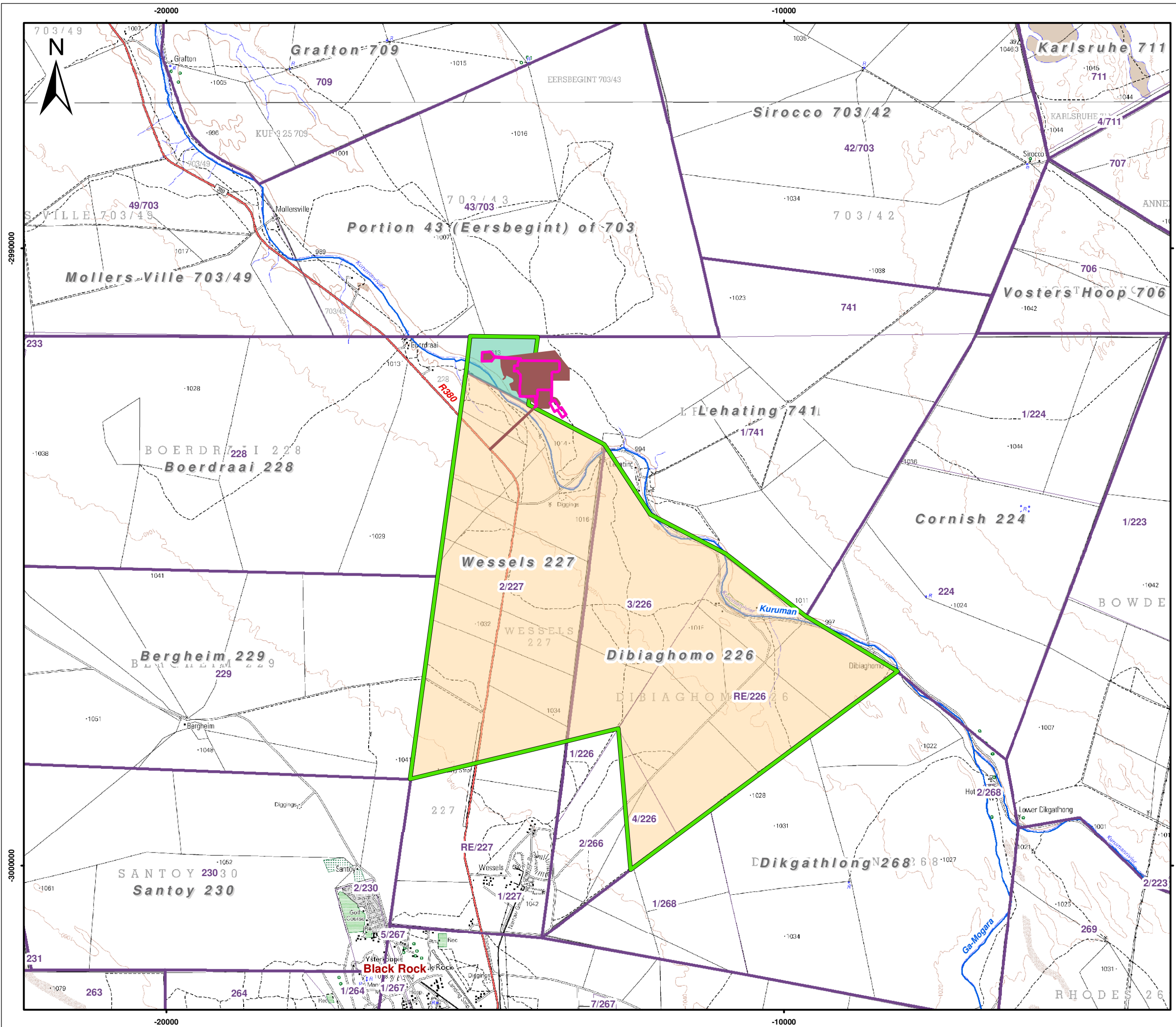
Responses to this document can be submitted by means of the attached comments sheet and/or through communication with the person listed below.

WHO TO CONTACT

Gugu Dhlamini

(011) 467 0945 (Tel) or (011) 467 0978 (Fax) or

gdlamini@slrconsulting.com



- Legend**
- Consolidated Mining Right Area
 - Khwara Mining Right Application Area
 - Existing Mn48 Mining Right Area
 - Main Roads
 - Rivers and Streams
 - 20m Contour Lines
 - Farm Boundaries
 - Farm Portions
 - Proposed Infrastructure Footprint
 - Approved Infrastructure Outline



Scale: 1 : 60 000 @ A3
 Projection: Transverse Mercator
 Datum: Hartbeeshoek, Lo23

Mn48 (Pty) Ltd

Figure 1
 Local Setting



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PROJECT OVERVIEW

OVERVIEW OF PROJECT

Mn48 holds a Mining Right and approved EMPr for the development of a new underground manganese mining operation located on a portion of Portion 1 of the farm Lehating 741. While early works site clearing activities have taken place to date, surface infrastructure has not been established on this farm.

Khwara Manganese (Pty) Ltd (Khwara) holds an approved EMPr for underground mining of manganese and iron ore in, on and under Portion 2 of the farm Wessels 227 and manganese ore in, on and under the Remaining Extent and Portions 3 and 4 of the farm Dibiaghomo 226 (Khwara MR Application Area). The Khwara EA was granted pursuant to Khwara's application for a mining right and an EA in respect of the Khwara MR Application Area. The Khwara MR Application is still being processed by the Department of Mineral Resources and Energy (DMRE). The underground manganese resource in the Khwara MR Application Area will be accessed using Mn48's approved surface infrastructure. In this regard, no surface infrastructure will be established on the properties within the Khwara MR Application Area.

Mn48 is now proposing to consolidate the Mn48 MR area and the Khwara MR Application Area and associated EMPrs and EAs. In addition, the approved layout of surface infrastructure located on a portion of Portion 1 of the farm Lehating 741 needs to be amended to cater for the consolidated operations following the outcome of the Bankable Feasibility Study. The associated infrastructure amendments include:

- The extension of the footprint of the approved Waste Rock Dump (WRD);
- The addition of a second Pollution Control Dam (PCD), and relocation of footprint of the already approved PCD;
- General re-configuration of approved surface infrastructure on a portion of portion 1 of the farm Lehating 741;
- The revision of the site Stormwater Management Plan (SWMP) due to the changes of the surface infrastructure layout; and
- The establishment of proposed new support infrastructure such as a helicopter pad and weighbridge.

It is anticipated that the overall footprint of the above amendments will be approximately 9 hectares (ha).

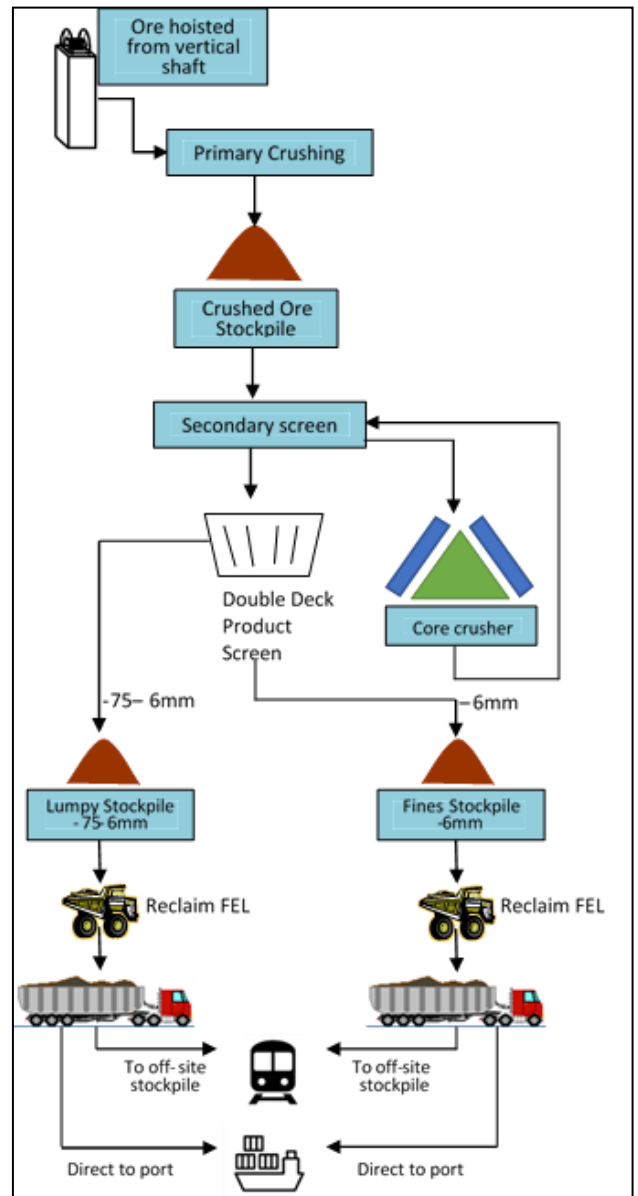
In addition to the above, the approved Mn48 EMPr specifies the need for a Tailings Storage Facility (TSF). A TSF will no longer be required and reference thereto will be removed as part of this project.

The Mn48 Mine development will commence in 2022. The underground resource in the Khwara MR Application Area will be mined from the north and the planned Life of Mine (LOM) with both the Khwara and Lehating resources combined will be approximately 23 years with the potential to increase to 28 years depending on the viability of resources on adjacent properties.

PROCESS OVERVIEW

A conceptual high-level process flow diagram is illustrated below:

1. Manganese ore is loosened using blasting underground and hoisted to surface via the vertical shaft.
2. The ore is subjected to various stages of crushing, and screening.
3. Lumpy product and fines are stockpiled separately, and then transported by road from the mine either directly to the port at Saldanha Bay, or to an off-site stockpile and loading facility 30 km from the mine, from where it will then be transported by rail to the port.



MOTIVATION FOR THE PROPOSED PROJECT

Consolidating the Mn48 Mining Right Area and the Khwara MR Application Area and corresponding EMPrs and EAs and the associated optimisation of approved surface infrastructure will allow for improved viability and operational efficiency.

PROJECT ALTERNATIVES

As part of its BFS, Mn48 has considered various technological alternatives, for example the development of a decline versus a vertical shaft system and underground versus above ground crushing. Site layout alternatives are limited given that the ore body is fixed and the configuration of surface infrastructure is planned accordingly. Further discussion regarding alternatives will be provided in the BAR.

STATUS OF EXISTING ENVIRONMENT

This section provides a basic description of the existing status of the proposed project area.

- **Geology:** Falls within the Kalahari Manganese Field.
- **Climate:** Characterised by seasonal rainfall, hot temperatures in summer and colder temperatures in winter.
- **Topography:** Relatively flat area, sloping gently towards the Kuruman River.
- **Soils and land capability:** Low cultivation potential due to the high infiltration rates and highly erodible due to a low clay content.
- **Plant life:** Kathu Bushveld vegetation type characterised by open savannah with *Vachellia erioloba* (Camel thorn) and *Boscia albitrunca* (Shepherd's tree) as the prominent trees. Southern Kalahari Mekkacha characterised by sparse, patchy grasslands, sedgeland and low herblands dominated by warm-season grasses on the bottom of dry riverbeds.
- **Animal life:** Very little evidence of wild faunal populations is associated with the general area and the proposed project area due to the presence of surrounding mining, prospecting and farming activities.
- **Surface water:** Ephemeral Kuruman River traverses the mining right areas. There is no third-party reliance on surface water.
- **Groundwater:** Groundwater quantity and quality has been influenced by existing mining operations in the broader area. The majority of third-party boreholes within and surrounding the project area are used for domestic use and livestock watering purposes.
- **Air quality:** Surrounding ambient air quality has been influenced by neighbouring mines, household fuel combustion, and vehicle tailpipe emissions.
- **Noise:** Greater area generally defined by rural features and is not subjected to elevated noise levels. Noise levels in the proposed project area are mainly as a result of surrounding farming activities, localised traffic and mining operations.
- **Visual:** Although numerous mining related structures dominate the landscape to the south, the overall surrounding scene is characterised by the Kuruman River channel and associated sand dunes, open views with grazing lands and associated activities.
- **Heritage/cultural and palaeontological resources:** Two very low-density scatters of lithic artefacts were observed in the project area, along the Kuruman River. These are considered to be of low significance and will not be impacted on by the project. The palaeontological sensitivity of the project area is low, although there is a possibility of Stromatolites being present in the project area.
- **Socio-economic:** The general area is characterised by a high level of unemployment and a dependency on subsistence agriculture and the mining sector with electricity as a source of energy in the area. Mining and government services are the main economic sectors.
- **Land use:** Land uses within the mining right areas include a combination of livestock grazing, game farming and sparsely situated residences.

POTENTIAL ENVIRONMENTAL/CULTURAL/SOCIO-ECONOMIC IMPACTS

Potential impacts that have been identified and will be investigated as part of the environmental impact assessment process are tabulated below. Where specialist input is required this has been indicated in the table below.

Aspect	Potential environmental/cultural/socio-economic impact	Specialist input (where required)
Geology	The sterilisation of mineral resources through the disposal of mineral resources onto mineralised waste facilities. This is unlikely given that the approved WRD footprint will be extended only marginally. It should also be noted, that with the TSF no longer being developed, the associated impacts relating to resource sterilisation may even be reduced.	Qualitatively assessed
Topography	Potential to further alter topography through an increase of the waste facility footprint areas. This is unlikely given that the proposed surface infrastructure changes are not expected to present new hazardous facilities. It should also be noted, that with the TSF no longer being developed, the associated impacts related to topography may even be reduced.	Qualitatively assessed
Soils and land	Potential to compromise soil resources through erosion, compaction and/or	Soil and land

Aspect	Potential environmental/cultural/socio-economic impact	Specialist input (where required)
capability	pollution and the related natural capability of the land through an increased footprint of the waste facilities. The associated impacts are expected to be limited given that the planned infrastructure changes are not expected to present no new sources of disturbance/pollution, and the approved infrastructure footprint extensions will be limited. In addition, the removal of the TSF from the project may allow for soils related impacts to be reduced.	capability study
Biodiversity	Potential to disturb and/or destroy vegetation, habitat units and related ecosystem functionality through an increased footprint of the waste facilities. The associated impacts are expected to be limited given that the planned infrastructure changes are not expected to present new sources of disturbance/pollution and the footprint extensions will be limited. The removal of the TSF from the project may allow for biodiversity related impacts to be reduced.	Terrestrial biodiversity study
Surface water	Potential increase of run-off containment that can alter natural drainage patterns, and the increase of pollution sources that can pollute surface water resources. The associated impacts are expected to be limited given that the SWMP will be optimised to support the amended surface infrastructure layout and limit potential impacts.	Hydrological study
Groundwater	Potential increase of existing pollution sources through the increase in the footprint of the waste facilities that can contaminate groundwater resources which could impact availability to surrounding groundwater users. The associated impacts are expected to be minimal given that the extended footprints of waste facilities (WRD, PCD) will be limited. In addition, the removal of the TSF from the project reduces the potential for groundwater impacts to arise.	Groundwater study and waste assessment
Air	Increase in emissions which could potentially have a negative impact on ambient air quality. The associated impacts are expected to be limited given that the proposed infrastructure changes are not expected to present new sources of air pollution	Air quality study
Noise	Potential increase in disturbing noise levels due to operations of vehicles. The associated impacts are expected to be limited given that the proposed infrastructure changes are not expected to present new sources of noise pollution	Qualitatively assessed
Visual	Potential contribution to negative visual views. The associated impacts are expected to be limited given that the proposed infrastructure changes are not expected to present new sources of visual intrusion. It should also be noted, that with the TSF no longer being developed, the associated impacts relating to visual intrusion may even be reduced.	Visual study
Heritage/cultural and palaeontological	The potential to damage heritage/cultural and palaeontological resources. The associated impacts are expected to be minimal given that the approved infrastructure footprint extensions will be limited.	Heritage/cultural and palaeontological study
Socio-economic	The potential to contribute towards positive and negative socio-economic impacts. The associated negative impacts are expected to be minimal given that the scope and scale of the planned amendments are limited. The amendments will increase the viability of the mining project providing greater assurance of the employment prospects.	Socio-economic study
Traffic	The potential to contribute negatively on road disturbance and traffic safety. The associated impacts are expected to be limited given that there will not be a significant increase in traffic as a result of the planned amendments.	Traffic study

ENVIRONMENTAL AUTHORISATION PROCESS

The environmental authorisation process provides:

- Information on the project and environment in which it is being undertaken;
- Identifies, in consultation with I&APs the potential negative as well as positive environmental/cultural/socio-economic impacts of the proposed project; and
- Reports on management measures required to mitigate impacts to an acceptable level and incorporates requirements for monitoring programmes (where required).

The likely process steps and timeframes are provided below.

STEPS IN THE AUTHORISATION PROCESS

PHASE I - Pre-application phase September 2020

- Pre-application meeting with the DMRE and DHSWS
- Notify other commenting authorities and I&APs of proposed project and environmental assessment process (via newspaper advertisements, site notices and this document).

PHASE II – BAR phase September to November/December 2020

- Submission of integrated Environmental Authorisation (NEMA/NEM:WA) application to the DMRE.
- Compile BAR and summary and distribute to I&APs and commenting authorities for review for 30 days.
- Update the BAR with any comments received during the public review period.
- Submit BAR (inclusive of comments raised during the review period) to the DMRE for decision making (107 days legislated decision-making period).
- Circulate decisions to I&APs registered on the project database.

PHASE III – IWUL phase (First quarter of 2021)

- Submission of the IWULA to the DHSWS.
- Compile technical documentation in support of the IWULA (specialist studies and the Integrated Water and Waste Management Plan) and submit to I&APs and commenting authorities for review for 30 days.
- Update the IWULA technical documentation with any comments received during the public review period.
- Submit the updated IWULA technical documentation (inclusive of comments raised during the review period) to the DWS for decision making (139-day legislated review period).
- Circulate decision (and the appeals process) to I&APs registered on the project database, within 14 days of decision being issued.

PARTIES INVOLVED IN THE ENVIRONMENTAL AUTHORISATION PROCESS

IAPs

- * Surrounding landowners, land users and community forums
- * Surrounding mines and industries
- * Parastatals

COMPETENT AUTHORITIES

- * Northern Cape Region of the Department of Mineral Resources and Energy (DMRE)
- * Northern Cape Department of Water and Sanitation (DWS)

COMMENTING AUTHORITIES

- * Northern Cape Department of Environment and Nature Conservation (DENC)
- * Northern Cape Department of Agriculture, Forestry and Fisheries (DAFF)
- * Provincial South Africa Heritage Resource Agency (SAHRA)
- * Northern Cape Department of Rural Development and Land Reform (DRDLR) – inclusive of the Land Claims Commissioner
- * Northern Cape Department of Roads and Public Works

LOCAL AUTHORITIES

- * Joe Morolong Local Municipality (includes ward 4 councillor)
- * John Taolo Gaetsewe District Municipality

Please let us know if there are any additional parties that should be involved.

