

Project Reference: 720.20002.00065 File Ref. Summary of the Environmetal Imppact Assessment Report for the Proposed Additional Waste Rock Storage Project at the Tharisa Mine

26 October 2022

Dear Sir/Madam,

## **THARISA MINERALS (PTY) LTD**

## SUMMARY OF THE ENVIRONMNETAL IMPPACT ASSESSMENT REPORT FOR THE PROPOSED ADDITIONAL WASTE ROCK STORAGE PROJECT AT THE THARISA MINE

#### 1. INTRODUCTION

This Summary provides a synopsis of the Environmental Impact Assessment Report compiled and distributed for review and comment as part of the Scoping and Environmental Impact Assessment process (S&EIA) that is being undertaken for an integrated Environmental Authorisation process at the Tharisa Mine.

Tharisa Minerals (Pty) Ltd (Tharisa) is an opencast mining operation that produces chrome and platinum group metal (PGMs) concentrates. The mine has been operational since 2008. The opencast mine is located on farms 342 JQ and Elandsdrift 467 JQ, south of the Marikana Town, in the North West Province.

Mining is undertaken in two mining sections, namely the East Mine and West Mine, using conventional open pit truck and shovel methods. The two mining sections are separated by the perennial Sterkstroom River and the D1325 (Marikana Road). Waste rock from the open pit areas is stockpiled on Waste Rock Dumps (WRDs) and some in-pit dumping of waste rock has taken place at the East Mine. Key existing mine infrastructure includes haul roads, run-of-mine, a concentrator complex, various product stockpiles, topsoil stockpiles, WRDs, Tailings Storage Facilities (TSFs) and supporting infrastructure such as offices, workshops, change house and access control facilities.

Tharisa holds the following Environmental Authorisations (EAs) and licenses:

- A Mining Right (MR) (Reference No.: 358 MR) issued by the Department of Minerals and Energy (DME) (currently the Department of Mineral Resources and Energy (DMRE)) on 19 September 2008 and amended in July 2011;
- An approved (Environmental Management Programme (EMPr) (Reference No.: NW 30/5/1/2/3/2/1/358EM) issued by the DME (currently the DMRE) on 19 September 2008;
- An EA (Ref No.: NWP/EIA/159/2007) issued by the Northwest Department of Agriculture, Conservation and Environment (DACE) (currently the North West Department of Economic Development, Environment, Conservation and Tourism (DEDECT) on 23 October 2009;
- An EA (Ref No.: 14/12/16/3/3/2/408) issued by the Department of Environmental Affairs on 15 November 2012;
- An EA (Ref No.: NWP/EIA/50/2011) issued by the Northwest DACE (currently the DEDECT) on 29 April 2015;
- An addendum to the Environmental Impact Assessment (EIA) and EMPr (Ref No.: NW/30/5/1/2/3/2/1/358EM) issued by the Department of Mineral Resources (DMR) (currently the DMRE) on 24 June 2015;
- An addendum to the EIA and EMPr (Ref No.: NW/30/5/1/2/3/2/1/358EM) issued by the DMR (currently the DMRE) on 14 Aug 2020 Waste Water Treatment Plant;



- An addendum to the EIA and EMPr (Ref No.: NW/30/5/1/2/3/2/1/358EM) issued by the DMR (currently the DMRE) on 08 Aug 2021 Fuel & Waste storage capacity increase;
- A Section 24G EA (Ref No.: NW/30/5/1/2/3/2/1/358EM) issued by the DMRE on 10 AUG 2021; and
- An amended Integrated Water Use Licence (IWUL) ((Licence No. 03/A21K/ABCGIJ/1468) issued by the Department of Water and Sanitation (DWS) in November 2020.

As part of its on-going mine planning, Tharisa has identified the need for additional waste rock storage on site (referred to as the Proposed Project). In this regard, Tharisa is making an application to the Department of Mineral Resources and Energy (DMRE) for an integrated EA and update of the mine's current EMPr. The following activities are now proposed:

- The expansion of the existing and approved Far West WRD 1 by a footprint of 109 ha. The expanded
  area will be referred to as the West Above Ground (OG) WRD. Portions of the West OG WRD will be
  located on backfilled areas of the West Pit; and
- The establishment of a waste rock dump (referred to as the East OG WRD) on backfilled portions of the East Pit. The proposed East OG WRD will cover an area of approximately 72 ha.

# 2. SUMMARY OF AUTHORISATION REQUIREMENTS AND ENVIRONMENTAL PROCESS

The Proposed Project will require an integrated EA and an amendment to Tharisa's current EMPr. The Proposed Project includes listed activities under the National Environmental Management Act (NEMA) EIA Regulations, 2014 (published under Government Notice Regulation (GNR) 982 of 4 December 2014, as amended), (hereafter referred to as EIA Regulations, 2014 (as amended)), and waste management activities listed under the National Environmental Management Waste Act, 59 of 2008 (NEM:WA). Under both the EIA Regulations, 2014 (as amended) and the NEM:WA, listed activities are prohibited from commencing until written authorisation is obtained from the competent authority, which in this case is the North West Province office of the DMRE. The project requires an integrated EA in terms of Section 24 of NEMA and Section 45 of NEM:WA from the North West Province office of the DMRE. In terms of the Section 102 of the Mineral and Petroleum Resources Development Act (MPRDA), an EMPr may not be amended or varied without the written consent of the Minister of Mineral Resources.

The MPRDA, NEMA and NEM:WA require that an applicant submit the relevant environmental reports required in terms of NEMA. The EIA Regulations, 2014 (as amended) promulgated in terms of NEMA set out the assessment process and reporting requirements where authorisation is required. Prior to the commencement of the Proposed Project the following is required:

- An amended EMPr in terms of Section 102 of the MPRDA from the Department of Mineral Resources and Energy (DMRE);
- An EA in terms of the NEMA for activities in Listing Notice 1 (GNR 983 of 2014) and Listing Notice 3 (GNR 985 of 2014), as amended, from the DMRE. The EIA Regulations being followed are Government Notice Regulation (GNR) 982 of 4 December 2014, as amended.
- A Waste Management Licence in terms of the National Environmental Management: Waste Act, 59 of 2008 (NEM:WA) for waste activities in Category B (GNR 921 of 2013), as amended.

A Scoping and Environmental Impact Assessment (S&EIA) process is required to inform the Proposed Project and meet regulatory requirements listed above.

In addition, the Proposed Project also requires authorisation from the Department Water and Sanitation (DWS) for specific water uses listed under Section 21 of the NWA. This Report does not address the



requirements of a water use licensing process. This will be handled as part of a separate process with the DWS.

SLR Consulting (South Africa) (Pty) Ltd (SLR), an independent firm of Environmental Assessment Practitioners (EAPs), has been appointed by Tharisa to manage the S&EIA process for the Proposed Project.

This S&EIA process does not address occupational health and safety legislative requirements.

#### 3. PROJECT ALTERNATIVES

The Tharisa Mining Right boundary has significant space constraints due to the existing infrastructure. Tharisa Mine is also bordered by other mining companies (Western Platinum Mine, Marikana Platinum Mine and Samancor) on the West, North and Eastern boundaries of the Tharisa Mining Right area. The N4 and farming community of Buffelspoort is located to the South of the Tharisa Mine. As such the location of the additional WRDs is dictated by the space available within the mining right area.

To minimise the extent of the project disturbance, portions of the project footprint will be located on previously disturbed areas and over backfilled portions of the pits. It follows that no location alternatives for the Proposed Project could be considered (or were possible).

The following technology/ activity alternatives were considered as part of the Proposed Project. These includes the following:

- Trucking waste rock to a different location: Open pit mining consists primarily of the removal of topsoil and overburden, drilling and blasting of ore, and the transportation of waste rock by haul trucks. Transportation of waste rock is cyclic in nature and requires the dispatch of a large number of trucks per month. Reducing the cycle time for transportation of waste rock results in increased productivity and reduces the operational costs. The proximity of the Proposed Project to the open pits allows for increased productivity, minimisation of transportation costs as well as minimisation of noise and traffic impacts associated with transportation of waste rock;
- Alternative mining technique (underground mining): Underground mining is used to extract ore from below the surface of the earth safely, economically and with as little waste as possible. Underground mining is practical when the ore body is too deep to mine profitably by open pit. The target ore body for underground mining has not been reached for Tharisa, as such underground mining, as an alternative mining technique is not considered feasible; and
- Waste rock backfill of open pits: Tharisa has approval for partial backfilling of the open pits with waste rock, this is currently undertaken concurrently with mining. The waste rock backfill of open pits at Tharisa mine has reached its maximum capacity.

It follows that no activity/technology alternative have been considered for the Proposed Project.

#### 4. PUBLIC PARTICIPATION COMPLETED TO DATE

The public participation process was initiated in 2021. The public participation completed to date has been aimed at the identification of Interested and Affected Parties (I&AP) and informing I&APs about the Proposed Project. Informing I&APs about the Proposed Project has been done through the dissemination of information sharing material (advertisements, site notices, flyers, and background information document (BID)) and through focussed and public meetings. I&APs will continue to be involved throughout the environmental authorisation process.

This Scoping Report was distributed for a 30-day comment period from 18 May to 17 June 2022 in order to provide Interested and Affected Parties (I&APs) with an opportunity to comment on any aspect of the project



and the findings of the S&EIA process to date. A non-technical summary was provided to I&AP's in English, Afrikaans, Setswana and Xhosa. Copies of the full report and Non-Technical Summary (NTS) was made available on the SLR website (at https://www.slrconsulting.com/en/public-documents/tharisa) and the SLR data-free website (at https://slrpublicdocs.datafree.co/public-documents/tharisa). Electronic copies (in the form of a compact disk) of the report are available from SLR. All comments received during the review process with responses are included in Table 8 2. This updated Scoping Report was made available to the DMRE for decision-making purposes.

#### 5. OPPORTUNITY TO COMMENT ON THE EIA REPORT

Opportunity to comment on the EIA Report

This draft EIA and EMPr will be made available for a 30-day review and comment period from 26 October 2022 to 25 November 2022.

- Copies of the report will be made available electronically on a CD, on request.
- Summaries of the report was e-mailed to registered I&APs and authorities. In addition, I&APs were notified when the report was available for review via SMS.
- A copy of the report can be downloaded here- https://www.slrconsulting.com/en/public-documents/public-documents/Tharisa-WRD and Data-free website: https://slrpublicdocs.datafree.co/en/public-documents/Tharisa-WRD.

#### 6. BASELINE BIOPHYSICAL ENVIRONMENT AFFECTED BY THE PROPOSED PROJECT

#### **LOCAL GEOLOGY**

Tharisa Mine is located on the south western limb of the BIC in the Marikana section. The Marikana section is separated from the Brits section to the east by the Wolhulterskop fault and the Rustenburg section to the west by the Spruitfontein upfold (see Figure 10 2). The target ore body is the Middle Group (MG) Chromitite Layers (MG1 –MG4). The MG Chromitite Layers outcrop on the farm 342 JQ striking roughly east - west and dipping at 12-15° to the north. Towards the western extent of the outcrop, the stratigraphy typically narrows, and the dip is steeper, with a gentle change in strike to north west- south-east. The entire MG package is developed over a true thickness of 47 m on the eastern portion of 342 JQ and thins to 25 m to the west near the Spruitfontein upfold.

#### **TOPOGRAPHICAL ENVIRONMENT**

In general, the area surrounding the Tharisa Mine comprises flat plains with a gentle slope (1%) towards the north. The Magaliesberg Mountain range lies approximately 2 km to the south of the mine. Peaks in this part of the Magaliesberg Mountain range rise to approximately 1 400 mamsl.

The natural topography immediately surrounding the Tharisa Mine has been largely influenced by the following activities and features:

- Mining activities associated with the surrounding Marikana Platinum Mine to the west, Western Platinum Mine to the north and Samancor Western Chrome Mine to the east.
- Community related activities associated with the Bokamoso community (located east of Far East WRD.
- The perennial Sterkstroom River, located between East Mine and West Mine, flowing in a northerly direction adjacent to the D1325 (Marikana Road).
- The N4 located immediate south of the Tharisa Mine together with farming related activities.



The Proposed Project area associated with East OG WRD and West OG WRD, has been altered due to the existing open cast mining related activities associated with the West and East mine. The natural topography associated with West OG WRD has been disturbed and altered as a result of the existing mining activities associated with West Mine and community related activities (particularly Maditlhokwa).

#### **CLIMATE**

The area experiences hot temperatures during summer, with maximum of 36.4°C for the month of October. Winter temperatures are relatively low especially in the months of May to July. Precipitation is important to air pollution studies since it represents an effective removal mechanism for atmospheric pollutants and inhibits dust generation potentials.. Months wherein the most rain occurred stretched from October to April. The total annual rainfall for the Project site is given to range between 873 mm and 939 mm.

The average wind field is predominately from the south and north, with calm conditions 7.6% of the time. The daytime wind field is mainly from the north, ranging between north-west to north-east with 5.1% calm conditions. During the night, the wind field shifts to the south and south-southwest with less frequent winds from the south-easterly sector. The frequency of night-time calm conditions increases to 10.3%.

During summer, the wind field is varied between most direction with more frequent winds from the north-eastern sector. The wind field shifts to south during autumn, with more frequent southerly winds during winter. During spring, the northerly winds increase with frequent north to north-east winds.

#### **AIR QUALITY**

The closest residential developments to Tharisa Mine and the Proposed Project consist of the Maditlhokwa and Lapologang communities, with the town of Marikana approximately 1.5 km to the north of the mining rights boundary. Individual farmsteads also surround the project area.

Mining and processing activities, farming and residential land-uses occur in the region. These land-uses contribute to baseline pollutant concentrations via vehicle tailpipe emissions, household fuel combustion, biomass burning and various fugitive dust sources. Long-range transport of particulates, emitted from remote tall stacks and from large-scale biomass burning in countries to the north of South Africa, has been found to contribute to background fine particulate concentrations within the South African boundary (Andreae, et al., 1996; Garstang, Tyson, Swap, & Edwards, 1996; Piketh, Annegarn, & Kneen, 1996).

Tharisa Mine has a dustfall monitoring network in place and does passive sampling of NO<sub>2</sub> and SO<sub>2</sub>. Data analysed for the ambient air quality is limited to the period January to March 2021 and January to March 2022. Both NO<sub>2</sub> and SO<sub>2</sub> are screened against Nartional Ambient Air Quality Standards (NAAQS) while dustfall is screened against the National Dust Control Regilations (NDCR).

It should be noted that the ambient measurements account for all emission contributions in the region, not just the mine.

#### SOILS AND LAND CAPABILITY

The entire footprint area of the East Above Ground WRD is located in a disturbed area as a result of the ongoing open pit mining and waste rock dumping activities. Whereas a significant portion of the West Above Ground WRD footprint area has also been subjected to significant disturbance as a result of similar mining activities. The soil form associated with the disturbed areas was classified as a Witbank soil form while the excavated areas where no soil exist were classified as Cullinan soil form. The remaining patches of natural soils within the West Above Ground footprint area were classified as Acardia (black turf) soil form.

The Witbank soil form is considered to be of very low agricultural potential due to the soils having been subjected to physical disturbance because of human interventions.

#### **BIODIVERSITY**

The study area is located within two vegetation types, namely the Marikana Thornveld in the east and the Moot Plains Bushveld in the east, i.e., the reference vegetation types. Overall, the habitat within the study



area was characterised by transformed areas (because of mining activities) in which vegetation cover ranged from almost absent to low. When vegetation was present, it was generally dominated by alien and invasive plant (AIP) species and/or native pioneer species that favour disturbed habitats. Given the level of transformation within the study area because of mining activities, the presence of indigenous vegetation1 was confirmed to be absent.

#### **SURFACE WATER**

The perennial Sterkstroom flows from the Buffelspoort Dam, south of the N4, through the mining operations, between the East and West mining areas. Two unnamed non-perennial tributaries of the Brakspruit originate in the north-west of the mine and drain the western side of the Mining Right area. Mining of the west pit has taken place within the headwaters of these tributaries. The eastern mining area is drained by two non-perennial drainage lines that formed a tributary to the Maretlwane. Mining of the East Pit has taken place within the headwaters of these drainage lines. In the south eastern corner of the mine, a tributary of the Elandsdriftspruit which originated just south of the mine, falls within the footprint of TSF 2. The diversion of this tributary was included in the approved EIA and EMP report (Metago, 2008).

None of the proposed WRDs will intersect perennial or non-perennial drainage lines at the Tharisa Mine. In this regard, the East OG WRD is approximately 260 m from the Sterkstroom and the West OG WRD is approximately 267 m South from tributaries of the Brakspruit.

Water from the Sterkstroom River is used by the surrounding community for domestic purposes such as washing and bathing, livestock watering and for agricultural purposes. An irrigation canal flows from north to south, along the eastern boundary of TSF1. There are no users of this irrigation canal downstream of the TSF.

#### FRESHWATER ECOSYSTEMS

A site assessment was undertaken on 26th April 2022 towards the end of the summer rainfall period to verify the Ecostatus of the identified freshwater ecosystems within 500 m of the study area, and to confirm the absence of freshwater ecosystems within the study area. The proposed WRDs will be within existing disturbed (open cast mining) areas, and therefore no freshwater ecosystems occur directly within the study area. However, two valley bottom wetlands are located immediately north of the proposed West Above Ground WRD, and an estimated 1 km reach of the Sterkstroom River is located approximately 235 m west of the East Above Ground WRD.

The wetlands were previously assessed by SAS (2013) and found to be moderately modified at the time; however, the ecological integrity of the wetlands has subsequently decreased and at the time of this assessment in May 2022, were found to be seriously modified (channelled valley bottom wetland) and critically modified (unchanneled valley bottom wetland).

The Sterkstroom River was previously assessed by SAS (2013) and The Biodiversity Company (TBC). During all assessments undertaken, including this assessment, the river is deemed to be moderately modified. The outcome of the assessments is summarised in the table below:

#### **GROUNDWATER**

The Tharisa Mine is underlain by a shallow upper weathered aquifer and a deeper fractured aquifer. The weathered overburden is highly variable in thickness from 3 m to more than 30 m based on existing borehole

<sup>1</sup> The NEMA definition of indigenous vegetation: "Indigenous vegetation: refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding 10 years.



logs and evidence of borehole depths. The deeper fractured bedrock aquifer is characterized by very low matrix permeability, poorly connected joints/fractures and dolerite/diabase dykes (that may act as barriers to groundwater flow).

The majority of the groundwater in the broader region is used in the form of third-party boreholes. Most of the boreholes are used for domestic and agricultural (livestock and irrigation) purposes. The weathered aquifer, as well as the alluvial aquifer along the Sterkstroom River, supports most irrigation and domestic water-supply boreholes throughout the region (SLR, 2014). Boreholes (community boreholes/third party) located within the Tharisa Mining Right area are used for domestic purposes and agricultural purposes (livestock and irrigation).

#### **NOISE**

Tharisa Mine is located in a district where the character of ambient noise is already affected by industrialisation and economic activity, which over time, has resulted in an increase in road traffic noise and noise generated by intensive mining activities. Road traffic noise emanates from the N4 and secondary roads, such as the D1325 between Buffelspoort and Marikana. The N4 has a wide noise footprint. It has a significant impact on people living within a zone of approximately 1.2 km either side of the road and is clearly audible in most of the study area. In addition, mining noise affects communities in the immediate surroundings of mines.

#### **VISUAL**

The combination of the mining, agricultural, open land and communities, create the sense of place for the study area. It comprises a variety of land uses common to the sub-region resulting in a landscape that exhibits little positive character, due to major evidence of alteration and degradation of its original natural features. The resultant sense of place is weak and of mixed character.

The Proposed Project occurs in landscape rated low in visual resource value. The development of the WRDs within the MRA and immediately adjacent to current mining activities, will not cause major changes to the existing mixed character of the landscape

### HERITAGE/CULTURAL AND PALAEONTOLOGICAL RESOURCES

According to the SAHRIS Palaeo sensitivity, the area proposed for development is underlain by sediments of zero palaeontological sensitivity. As such, it is very unlikely that the proposed establishment of additional waste rock storage will impact on significant palaeontological heritage and no further assessment of impacts to palaeontological heritage is recommended.

In the assessment completed by Pistorius (2009) for the Tharisa Mine, it is noted that the following heritage resources that exist within the mine area: Stone walled settlements which date from the Late Iron Age; Historical structures such as farmhouses with outbuildings, agricultural infrastructure and the van Rensburg School (now called the Retief Primary School); At least six graveyards as well as objects with heritage significance such as outdated and discarded agricultural implements.

None of these known sites is anticipated to be impacted by the proposed creation of waste rock storage areas.

#### **SOCIO-ECONOMIC**

The Tharisa Mine is located in the Bojanala District Municipality and Rustenburg Local Municipality of the North West Province. The nearest formal towns to the mine are the towns of Marikana and Mooinooi, located approximately 4 km north west and 6 km south east of the Tharisa Mine, respectively. Smaller communities such as Lapologang village (480 m south of West Pit), Mmaditlhokwa/Silver City (immediately north of West Pit) and Buffelspoort (450 m south of the N4) are located in close proximity to the mine. Various other clusters of land dwellers/informal settlements are in the located in the general vicinity as well.

The District Municipality can largely be classified as rural with very low population densities that make the provision of basic services very difficult and expensive. It is estimated that the district has the following



dwelling types: very formal-19.24%, formal – 50.05%, informal-29.45%, traditional-0.58% and other dwelling types-0.67%. The Local Municipality has high proportional and actual number of households residing in informal dwellings, as compared to other local municipalities. Within the Local Municipality, it is estimated that as much as 30% of households are residing in informal dwellings.

#### **LAND USE**

Based on the observations during the site assessment, the dominant land uses within the proposed WRD footprint areas are mining related activities. No agricultural activities were observed in the immediate vicinity of the footprint areas.

#### 7. IMPACT ASSESSMENT

A list of the potential <u>significant</u> impacts identified is provided in the table below. The level of residual risk after management or mitigation, associated with the Proposed Project, is also estimated. A detailed impact assessment is provided in **Error! Reference source not found.**.

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE if not mitigated	SIGNIFICANCE if mitigated
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Loss and sterilisation of mineral resources	Medium	Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Simulated PM10 daily ground level concentrations (GLCs), with current mitigation measures in place, are in noncompliance with the NAAQS over a portion of the Maditlhokwa Community and to the north-east of the mining rights boundary, but at no other AQSRs. Annual average GLCs are within compliance with the NAAQS at all AQSRs, except at Maditlhokwa Community.  Simulated PM2.5 daily ground level concentrations (GLCs), with current mitigation measures in place, are in noncompliance with the NAAQS for an area to the north-east of the mining rights boundary (mostly over the WRD), but not at any AQSRs. Over an annual average the GLCs are within the NAAQS at all AQSRs.	High	Medium
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	PM10 daily GLCs, for unmitigated activities, are likely to exceed the NAAQS for a distance of up to 3.5 km from the mining rights boundary on the eastern side and for about 1 km to the west and north. PM <sub>2.5</sub> daily GLCs, for unmitigated activities, are likely to exceed the NAAQS for a few hundred meters outside mining rights boundary	High	Medium
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Soil Compaction	Medium	Very Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Impacts on Water Quality- In the absence of pollution containment measures the intensity of the potential impact is expected to be high	High	Low
Establishing waste rock over backfilled portions of the	Contamination to groundwater systems	Low	Very Low

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71	K

			JLI
East Pit (East OG WRD and West OG WRD).			
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Dewatering and loss of yield from I & AP boreholes in close proximity to mining developments (South of West Pit) due to maximum impact ZOI	High	Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Dewatering and loss of yield from boreholes downstream of mining developments (Marikana Informal settlement) due to maximum impact ZOI	High	Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Drawdown effect on the Sterkstroom due to open pit dewatering from East and West Pit.	High	Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Existence of hydraulic connections between the East Pit and Samancor Underground and groundwater leakage into East Pit.	Medium	Very Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Contamination to groundwater and surface water systems due to Nitrate migration from current and new mine residue facilities	Medium	Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Loss of floral habitat and diversity	Medium	Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Loss of habitat and species diversity in the Transformed Habitat	Medium	Very Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Loss of faunal habitat and species diversity	Medium	Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	Loss of faunal habitat and species diversity	Medium	Very Low
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	The significance of construction phase noise impacts on nearby NSRs is considered medium (without mitigation). Due to the close proximity to the NSRs (assuming no NSRs are relocated), it is unlikely the significance will reduce unless the Mmaditlhokwa and Lapologang communities can be relocated.	Medium	Medium
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	The significance of operation phase noise impacts on nearby NSRs is considered high	High (H)	Medium
Establishing waste rock over backfilled portions of the East Pit (East OG WRD and West OG WRD).	The significance of closure and decommissioning phase noise impacts on nearby NSRs (assuming no NSRs are relocated) is considered medium	Medium	Medium



All activities involving employment and procurement of goods and services will stimulate local business and create opportunities for entrepreneurship.

Medium +

Medium +

Medium +

## 8. MITGATION MEASURES

A full list of mitigation measures to manage the above-mentioned impacts are presented in the EMPr.

File Ref. Summary of the Environmental Impact Assessment Report for the proposed Additional Waste Rock Storage Project at the Tharisa Mine



## Figure 1: Regional setting

File Ref. Summary of the Environmental Impact Assessment Report for the proposed Additional Waste Rock Storage Project at the Tharisa Mine



Figure 2: Local Setting

#### **THARISA MINERALS (PTY) LTD**

## SUMMARY OF THE ENVIORNMENTL IMPACT REPORT FOR THE PROPOSED ADDITIONAL WASTE ROCK STORAGE PROJECT AT THE THARISA MINE

**OCTOBER 2022** 

PARTICULARS OF THE INTERES	STED AND AFFECTED PARTY	DATE		
NAME				
ORGANISATION/COMPANY				
POSTAL ADDRESS				
		POSTAL CODE		
TELEPHONE NUMBER				
E-MAIL ADDRESS				
	ITERESTED & AFFECTED PARTY DRIMATION AND NOTIFICATION ATTION PROCESS		YES	NO
			E-MAIL	
HOW WOULD YOU LIKE TO RECEIVE YOUR NOTIFICATIONS?		POST		
			SMS	
PLEASE WRITE YOUR COMME	NTS AND QUESTIONS HERE (plo	ease use separate	sheets if you wish)	

## PLEASE INCLUDE THE FOLLOWING OF MY COLLEAGUES/FRIENDS/NEIGHBOURS AS I&APS FOR THIS PROJECT:

#### Please return completed forms to:

SLR contact: Chané Coetzee
Email: ccoetzee@slrconsulting.con

By providing your personal information to be registered as an I&AP for this project you consent to SLR managing your information in accordance with the Protection of Personal Information Act 4 of 2013. This includes; retaining and using your Personal Information as part of a contact database for this and/or other ESIAs, contacting you regarding this and/or other ESIA processes, disclosing the database to other authorised parties including the applicant for lawful purposes, and including any correspondence in the ESIA Reports. You may request for your Personal Information to be deleted from the Project database or comments to be excluded from ESIA Reports at any time by contacting SLR.

THANK YOU FOR YOUR CONTRIBUTION!!!