



**ECONOMIC IMPACT AND ALTERNATIVE LAND-USE  
ASSESSMENT FOR THE PROPOSED UNDERGROUND  
KHWARA MANGANESE MINE**

prepared for SLR Consulting (Africa) (Pty) Ltd in support of the environmental  
impact assessment and the environmental management programme for the  
proposed mining development for

**KHWARA MANGANESE (PTY) LTD**

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**KHWARA MANGANESE (PTY) LTD -  
ECONOMIC IMPACT AND ALTERNATIVE LAND-USE  
ASSESSMENT FOR THE PROPOSED UNDERGROUND KHWARA  
MANGANESE MINE**

**PROJECT MANAGER:** Werner Neethling  
**REPORT AUTHOR:** Werner Neethling  
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**Mercury Financial Consultants (Pty) Ltd**  
Postnet Suite 381, Private Bag X82245, Rustenburg, 0300  
Phone: +27(79) 510 9837  
E-mail: [werner@mercuryfc.co.za](mailto:werner@mercuryfc.co.za) .

# KHWARA MANGANESE (PTY) LTD - ECONOMIC IMPACT ASSESSMENT FOR THE PROPOSED UNDERGROUND KHWARA MANGANESE MINE

## CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2</b>	<b>OBJECTIVE OF THIS STUDY</b>	<b>1</b>
2.1	PROPOSED APPROACH AND METHODOLOGY	2
<b>3</b>	<b>NEMA APPENDIX 6 REQUIREMENTS FOR SPECIALITS REPORT</b>	<b>2</b>
<b>4</b>	<b>BACKGROUND INFORMATION</b>	<b>3</b>
4.1	PROJECT STRUCTURE	3
4.2	PROJECT OVERVIEW	4
4.2.1	PROJECT INFRASTRUCTURE	4
4.2.2	PROJECT EMPLOYMENT OPPORTUNITIES	5
4.2.3	PROJECT SCHEDULE	5
4.2.4	DECOMMISSIONING AND CLOSURE	5
4.3	IDENTIFIED CURRENT LAND USES	6
4.3.1	PROJECT LOCATION	6
4.3.2	LAND OWNERS WITHIN THE PROPOSED PROJECT AREA	6
4.3.3	MINING COMPANIES	6
4.3.4	LIVESTOCK AND GAME GRAZING	7
4.3.5	COMMUNITIES/TOWNS AND ISOLATED FARMSTEADS	7
4.4	POTENTIAL ALTERNATIVE LAND USES	8
<b>5</b>	<b>ISSUES RAISED DURING PUBLIC CONSULATION</b>	<b>8</b>
<b>6</b>	<b>PROVINCIAL, REGIONAL AND LOCAL SOCIO-ECONOMIC PROFILE</b>	<b>9</b>
<b>7</b>	<b>NATIONAL, PROVINCIAL AND LOCAL CONSIDERATIONS</b>	<b>11</b>
7.1	NATIONAL POLICIES AND STRATEGIES	12
7.1.1	NATIONAL STRATEGY FOR SUSTAINABLE DEVELOPMENT AND ACTION PLAN (2011)	12
7.1.2	NATIONAL DEVELOPMENT PLAN 2030 (2010)	13
7.1.3	NEW GROWTH PATH (2010)	13
7.1.4	NATIONAL FRAMEWORK FOR SUSTAINABLE DEVELOPMENT (2008)	13
7.1.5	NATIONAL SPATIAL DEVELOPMENT PERSPECTIVE (2006)	14
7.2	MINING LEGISLATION	14
7.3	CONCLUSION	15
<b>8</b>	<b>ECONOMIC INDICATORS</b>	<b>15</b>
<b>9</b>	<b>QUANTIFICATION OF ECONOMIC BASELINE</b>	<b>18</b>
9.1	POTENTIAL ECONOMIC IMPACT FROM CURRENT LAND USE ACTIVITIES	18
9.1.1	AGRICULTURAL - LAND VALUE	19
9.1.2	AGRICULTURAL - EMPLOYMENT	19
9.1.3	AGRICULTURAL - ECONOMIC CONTRIBUTION	20
9.2	POTENTIAL ECONOMIC IMPACT FROM PROPOSED MINING DEVELOPMENT	20
9.2.1	LAND VALUE	20

9.2.2	DIRECT EMPLOYMENT.....	20
9.2.3	ECONOMIC IMPACT .....	21
9.2.4	CONTRIBUTION TOWARDS SOCIO-ECONOMIC DEVELOPMENT .....	22
<b>10</b>	<b>ECONOMIC IMPACT ASSESSMENT .....</b>	<b>22</b>
10.1	IMPACT ASSESSMENT METHODOLOGY.....	22
10.2	ECONOMIC IMPACT ASSESSMENT .....	23
<b>11</b>	<b>ASSUMPTIONS AND LIMITATIONS.....</b>	<b>28</b>
<b>12</b>	<b>MITIGATION MEASURES .....</b>	<b>28</b>
<b>13</b>	<b>CONCLUSION.....</b>	<b>29</b>
<b>14</b>	<b>REFERENCES .....</b>	<b>30</b>

#### LIST OF FIGURES

FIGURE 1: NATIONAL, PROVINCIAL AND LOCAL CONSIDERATIONS.....	12
FIGURE 2: ECONOMIC IMPACT FRAMEWORK .....	17

#### LIST OF TABLES

TABLE 1: NEMA APPENDIX 6 REQUIREMENTS .....	2
TABLE 2: LANDOWNERS LOCATED WITHIN THE PROPOSED PROJECT AREA.....	6
TABLE 3: SUMMARY OF THE PROVINCIAL AND LOCAL SOCIO-ECONOMIC PROFILE .....	9
TABLE 4: CRITERIA FOR ASSESSING IMPACTS (PROVIDED BY SLR).....	22
TABLE 5: ECONOMIC IMPACT ASSESSMENT ANALYSIS .....	24

## **DECLARATION OF INDEPENDENCE**

Mercury Financial Consultants (Pty) Ltd (Mercury) was established in 2013 and primarily undertakes economic impact assessments in support of environmental impact assessments. The company also provides business development and support services to SMMEs (Small, Medium and Micro-sized Enterprises). Mercury comprises of a small team of professionals, which focusses on delivering strategic and sustainable solutions to its clients. Mercury in its dynamic approach to an ever-changing business environment have established strategic partnerships with key environmental and social consultants.

Werner Neethling is a senior consultant at Mercury and is a qualified management accountant with over 15 years experience. Werner Neethling, the primary author of this report, hereby declare that he is an independent economic assessment specialist. Werner Neethling CV is attached as Annexure A.

Mercury compiled the Economic Impact Assessment for the proposed underground mine for Khwara Manganese (Pty) Ltd based on independent research and analysis. I hereby confirm that I have no business, financial, personal or other interest in the activity proceeding other than remuneration for work performed as defined under “independent” in Chapter 1 of the Environmental Impact Assessment Regulations, 2010/2014.

**WERNER NEETHLING (ACMA)**  
**(Author)**

**DATE**

## ACRONYMS AND ABBREVIATIONS

Below a list of acronyms, abbreviations and definitions used in this report.

ACRONYMS / ABBREVIATIONS	DEFINITION
DMR	Department of Mineral Resources
EIA	Environmental impact assessment
EMP	Environmental management plan
GDP	Gross Domestic Product is defined by the Organisation for Economic Co-operation and Development (OECD) as an aggregate measure of production equal to the sum of the gross values added of all resident, institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs).
IDP	Integrated Development Plan
IRR	Internal Rate Of Return is the discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero. Generally speaking, the higher a project's internal rate of return, the more desirable it is to undertake the project.
JMLM	Joe Morolong Local Municipality
JTDM	John Taolo Gaetsewe District Municipality
LED	Local economic development
Mercury	Mercury Financial Consultants (Pty) Ltd
MPRDA	Mineral and Petroleum Resources Development Act, Act 28 of 2002
NPV	Net present value is difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyse the profitability of an investment or project.
PV	Present value
SLP	Social and labour plan
SLR	SLR Consulting (Africa) (Pty) Ltd

# KHWARA MANGANESE (PTY) LTD - ECONOMIC IMPACT ASSESSMENT FOR THE PROPOSED UNDERGROUND KHWARA MANGANESE MINE

## 1 INTRODUCTION

SLR Consulting (Africa) (Pty) Ltd (SLR), has been appointed by Khwara Manganese (Pty) Ltd (“Khwara”) to undertake the environmental impact assessment (EIA) process for a proposed underground manganese mine on portion 2 and the remaining extent of the farm Wessels 227 and portion 3 and 4 of the farm Dibiaghomo 226, north of Black Rock in the Northern Cape Province. The town Kuruman is located approximately 67km to the southeast from the boundary of the proposed project area within the Kuruman Magisterial District within the John Taolo Gaetsewe District Municipality (JTDM) and Joe Morolong Local Municipality (JMLM).

SLR has appointed Mercury Financial Consultants (Pty) Ltd (Mercury) to undertake the Economic Impact and Alternative Land-use Assessment in support of the EIA process.

## 2 OBJECTIVE OF THIS STUDY

The objectives of this specialist investigation was to determine the following in support of undertaking the EIA and the compilation of the Environmental Management Programme (EMP)

- undertake a preliminary analysis to identify economic conditions in order to profile baseline conditions;
- undertake a baseline assessment to quantify property value or infrastructure assets, to determine current commercial and economic contributions of potentially directly affected persons and to identify and quantify potential alternative land use activities;
- quantify the impact on economic conditions of directly affected persons by determining the potential impact, in financial terms, of the loss in property value or infrastructure assets and determining the economic loss, in terms of net present value, of commercial, economic or as a result of the proposed mining activity;
- undertake a comparative assessment of the identified land use and development alternatives and their potential on the environment, social and cultural impacts in view of

generally accepted sustainable development principles which considers the costs and benefits of social, environmental and economic factors; and

- provide input, together with SLR into management measures going forward.

## 2.1 PROPOSED APPROACH AND METHODOLOGY

The following approach and methodologies were applied in the process of identifying and evaluating potential economic impacts:

- preliminary analysis to identify and prioritise economic impact considerations and to identify the information requirements;
- profiling baseline conditions, which focused on the gathering of information about the economic environment and context of the proposed development;
- predicting impacts, quantifying impacts and model development: This step involved the analysis of the information which were collected from the scoping phase, baseline profiling and past experiences to predict possible economic impacts. Trade-offs between the adverse and beneficial impacts of a proposed development are part of this analysis were determined. Issues raised by interested and affected parties were taken into to consideration in the process of identifying and evaluating potential economic impacts;
- quantify potential outcomes in financial terms by using various assumptions and financial modelling techniques and incorporating economic risk factors;
- impact assessment. Methodology as prescribed by SLR and outlined in Section 10.1 was utilised; and
- defined mitigation plans and recommendations to ensure potential risks are adequately mitigated.

## 3 NEMA APPENDIX 6 REQUIREMENTS FOR SPECIALISTS REPORT

This report has been compiled in compliance with the requirements specified in Appendix 6 of the Environmental Impact Assessment Regulations (R982 of 2014) published in term of the National Environmental Management Act, 107 of 1998 as outlined in Table 1 below:

**TABLE 1: NEMA APPENDIX 6 REQUIREMENTS**

REQUIREMENT	REFERENCE IN THIS REPORT
1.(1) A specialist report must contain:	
(a) details of- (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report	A declaration of independence is included in the beginning of the report.



REQUIREMENT	REFERENCE IN THIS REPORT
1.(1) A specialist report must contain:	
including a curriculum vitae;	Curriculum vitae included as Appendix A
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Appendix B
(c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 2
(d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	No site visit was undertaken
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process;	Section 2
(f) the specific identified sensitivity of the site related to the activity and its associated structures and infrastructure;	Not applicable
(g) an identification of any areas to be avoided, including buffers;	Not applicable
(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Not applicable
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 11
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives on the environment;	Sections 9 and 10
(k) any mitigation measures for inclusion in the EMPr;	Section 12
(l) any conditions for inclusion in the environmental authorisation;	None identified
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	None identified
(n) a reasoned opinion- (i) as to whether the proposed activity or portions thereof should be authorised; And (ii) if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Sections 13
(o) a description of any consultation process that was undertaken during the course of preparing the specialist report;	Section 5
(p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Section 5
(q) any other information requested by the competent authority.	None requested

## 4 BACKGROUND INFORMATION

### 4.1 PROJECT STRUCTURE

Tshipi é Ntle Manganese Mining Company (Pty) Ltd (“Tshipi”) is a privately-owned company comprising of 50.1% Ntsimbintle Mining Company (Pty) Ltd with OM Holdings and 49.9% Jupiter Mines Ltd. Ntsimbintle Mining Company (Pty) Ltd. The company is accredited with a 51% black ownership and is a level 4 contributor.

In 2010 the Pallinghurst Co-Investor stake was subsequently joined with another Pallinghurst portfolio company, Jupiter Mines Limited. Also in 2010 Ntsimbintle concluded an agreement with OM Holdings (OMH), which resulted in OMH acquiring a direct 26% shareholding in Ntsimbintle SPV, a company created to hold Ntsimbintle's 50.1% interest in the Tshipi Borwa Mine and the Khwara prospecting rights.

Tshipi é Ntle Manganese Mining (Pty) Ltd (Tshipi) held a prospecting right (NC30/5/1/1/2/1251PR) for manganese on portion 2 of the farm Wessels 227 and the remaining extent and portion 3 and 4 of the farm Dibiaghomo 226. As part of a Section 11 process in terms of the Mineral and Petroleum Resources Development Act 28 of 2002, the prospecting right was transferred to Khwara (NC30/5/1/1/2/1251/10837PR) on 23 January 2017. Khwara has applied to the DMR for a mining right over the above portions of the farms Wessels 227 and Dibiaghomo 226, referred to as the Khwara Mine project.

Lehating Mining (Pty) Ltd (Lehating), a privately held South African registered company which comprises of individual and institutional shareholders, owns a 100% interest in the Lehating Manganese Project, located on the adjacent farm (Portion 1 of Lehating 741). Lehating holds the mining right and have an approved environmental management programme (EMP) from the Department of Mineral Resources (DMR) for manganese and iron (approved October 2013). Lehating also holds an environmental authorisation (EA), issued by the Department of Environment and Nature Conservation (DENC) in September 2014 in terms of the National Environmental Management Act, 107 of 1998 (NEMA). The construction of the Lehating Mine has not yet commenced.

Khwara underground ore resources will be accessed via the Lehating Mine shaft infrastructure. Therefore no surface area will be disturbed as part of the proposed Khwara Mine project as mine infrastructure associated with the Lehating mine will be adequate to support the proposed Khwara Mine project.

## **4.2 PROJECT OVERVIEW**

### **4.2.1 Project infrastructure**

As mentioned in the previous section, the ore resources will be accessed and mined from the Lehating underground mine. Approved surface infrastructure at the Lehating Mine, located on the

farm Lehating 741, will be used to support the mining of the underground resources on the farms Wessels 227 and Dibiaghomo 226.

The resource to be mined is the manganese ore body of the Kalahari Manganese field. It is planned to mine the ore body using underground mining methods. Minimum waste rock is expected to be generated by the proposed project as mining will be carried out on reef via Lehating's underground mine. In the event that waste rock is generated, waste rock will either be loaded into a rear tipper truck and then transported to the waste rock stockpile at the Lehating Mine, or stored underground. The approved Lehating Mine will be able to support any waste rock generated by the proposed project for the short to medium term. It follows that no additional waste rock capacity is required for the proposed project.

No surface infrastructure will be established as part of the proposed Khwara project and approved facilities associated with the Lehating mine will be utilised to crush and screen the ore material prior to sale to third parties. The approved Lehating mine's tailings dam will be able to support the proposed project for the short to medium term. It follows that no additional capacity is required as part of the proposed project.

#### 4.2.2 Project employment opportunities

It is estimated that a total of 350 employment opportunities from Lehating will be maintained. No housing will be provided during the operational phase. Operational workers will be accommodated in nearby towns, such as Black Rock, Hotazel, Kathu and Kuruman.

#### 4.2.3 Project schedule

The Lehating Mining Project is planned to commence in 2018. The Khwara ore body will be accessible through Lehating's underground development in 2036. Therefore, subject to DMR approval, Khwara underground mining will commence in 2036 for a period of approximately 10 years.

#### 4.2.4 Decommissioning and closure

Decommissioning and closure activities associated with the proposed project will form part of the overall decommissioning and closure related activities. Decommissioning related activities specific to

the proposed project however will include providing underground support. Closure specific activities may include the monitoring of groundwater to manage any latent dewatering risks.

### 4.3 IDENTIFIED CURRENT LAND USES

Information in this section was obtained from the Scoping Report (SLR, 2017).

#### 4.3.1 Project location

The proposed southernmost boundary of the project is located approximately 2 km north northeast of Black Rock in the Northern Cape Province. The town of Kuruman is located approximately 67km to the south east from the boundary of the proposed project area within the Kuruman Magisterial District within the John Taolo Gaetsewe District Municipality (JTDM) and Joe Morolong Local Municipality (JMLM). The town Kathu located approximately 72km to the south from the boundary of the proposed project area

The proposed project is located within the Gamogara corridor, which is identified as a mining belt according to the Joe Morolong Spatial Development Framework (JMLM, September 2012). The Kuruman River is located along the northern portion of the proposed mining right area. The Kuruman River is ephemeral in nature and as such will only flow during heavy rain events and can be associated with a perched water table. Due to the ephemeral nature of the Kuruman River, there is no third party reliance on surface water. Boreholes in the proposed project area are utilised for domestic purposes or livestock watering.

#### 4.3.2 Land owners within the proposed project area

Landowners located within the proposed project area are outlined in Table 2 below.

**TABLE 2: LANDOWNERS LOCATED WITHIN THE PROPOSED PROJECT AREA**

RELEVANT FARMS	RELEVANT PORTION	LANDOWNER
Wessels 227	Portion 2	Ntsimbintle Mining Pty Ltd
Dibiaghomo 226	Portion 3	Ntsimbintle Mining Pty Ltd
	Portion 4	Ntsimbintle Mining Pty Ltd
	Remaining extent	Magdalena Aletta van der Walt

#### 4.3.3 Mining companies

Mining companies with existing and/or proposed operations surrounding the proposed Khawara project area include:

- Lehating, located on the adjacent farm, north of the proposed project area
- South 32 (Wessels Mine) – Located approximately 1km south from the boundary of the proposed project area
- Assmang (Pty) Ltd (Nchwaning Mine) – Located approximately 3.4km south from the boundary of the proposed project area
- Assmang (Pty) Ltd (Black Rock Mine) – Located approximately 3.29km south west from the boundary of the proposed project area
- Assmang (Pty) Ltd (Gloria Mine) – Located approximately 6.2km south east from the boundary of the proposed project area
- Kalagadi Manganese (Pty) Ltd (Kalagadi Mine) – Located approximately 10km south east from the boundary of the proposed project area
- Kudumane Manganese (Pty) Ltd (Kudumane Mine) – Located approximately 14km south east from the boundary of the proposed project area
- Sebilo Resources (Pty) Ltd (Sebilo Mine) – Located approximately 21.45km south east from the boundary of the proposed project area
- United Manganese of Kalahari (Pty) Ltd (United Manganese of Kalahari Mine) – Located approximately 22km south east from the boundary of the proposed project area
- Tshipi é Ntle Manganese (Pty) Ltd (Tshipi Borwa Mine) – Located approximately 30km south southeast from the boundary of the proposed project area
- South 32 (Mamatwan Mine) - Located approximately 29km south east from the boundary of the proposed project area

#### 4.3.4 Livestock and game grazing

Livestock grazing currently takes place within the proposed project area. In this regard, Willem Strauss currently leases land on portion 2 of the farm Wessels 227 for ad-hoc grazing. Livestock grazing and game farming takes place surrounding the proposed project area. A farm employee resides in an old farm house on the farm employed by Willem Strauss.

#### 4.3.5 Communities/towns and isolated farmsteads

The nearest residential areas include the following:

- The Black Rock community located approximately 2.5km south from the boundary of the proposed project area

- Isolated farmstead located approximately 2.6km south east from the boundary of the proposed project site on the farm N'chwaneng 267
- Gloria Mine village located approximately 7km south east from the boundary of the proposed project area
- Black Rock mine village located approximately 5.4km south from the boundary of the proposed project area
- Isolated farmstead located approximately 9.4km south west from the boundary of the proposed project site on the farm Olivewood 284
- Isolated farmstead located approximately 10km south from the boundary of the proposed project area on the farm Umtu 281
- The Hotazel town situated approximately 12km south east from the boundary of the proposed project area
- Isolated farmstead located approximately 12 km south west from the boundary of the proposed project site on the farm Olivepan 282
- The town Kuruman located approximately 67km to the south east from the boundary of the proposed project area
- The town Kathu located approximately 72km to the south from the boundary of the proposed project area

#### **4.4 POTENTIAL ALTERNATIVE LAND USES**

Livestock grazing and game farming activities are already taking place in areas surrounding the proposed project area and typical soil forms found in the area (Hutton and Clovelly) are characterised by high infiltration rates and low clay content, which supports grazing land use capabilities. The alternative land use is therefore farming enterprises relating cattle ranches as the land is suited for grazing.

## **5 ISSUES RAISED DURING PUBLIC CONSULATION**

SLR undertook a public consultation process. The consultation process included public scoping and regulatory authority meetings as outlined, with relevant records, in the Scoping Report (SLR, 2017). Interested and affected parties raised a concern relating to the fact that no new employment opportunities will be created. The economic contribution towards employment as a result of the proposed Khwara project is discussed in Section 9.2.2.

## 6 PROVINCIAL, REGIONAL AND LOCAL SOCIO-ECONOMIC PROFILE

The John Taolo Gaetsewe District Municipality (previously Kgalagadi) is a Category C municipality located in the north of the Northern Cape Province, bordering Botswana in the west. It comprises the three local municipalities of Gamagara, Ga-Segonyana and Joe Morolong, and 186 towns and settlements, of which the majority (80%) are villages.

It has an established rail network from Sishen South and between Black Rock and Dibeng. It is characterised by a mixture of land uses, of which agriculture and mining are dominant. The district holds potential as a viable tourist destination and has numerous growth opportunities in the industrial sector. The economic nodes and employment opportunities are concentrated in towns such as Kuruman and Kathu. The main economic sectors are agriculture, mining and retail, with employment opportunities concentrated around Kuruman and the mines situated around Kathu, Hotazel and Black Rock. The annual average income per household equates to R29 400.

The Joe Morolong Local Municipality is a Category B municipality. It is the largest municipality of the three that make up the district, accounting for three quarters of its geographical area. The area is mostly rural, with about 60% of it comprising virgin land surface. Although unemployment is high, the municipality has a great deal of potential for developers, especially those interested in ecotourism and conservation. Main economic sectors include agriculture, mining and community services.

A summary of the socio-economic profile of the Northern Cape, the John Taolo Gaetsewe District Municipality (JTGD) and the Joe Morolong Local Municipality (JMLM) is provided in Table 3. The information in Table 3 were based on statistics from the Census 2011 as conducted by Statistics SA, unless otherwise specified.

**TABLE 3: SUMMARY OF THE PROVINCIAL AND LOCAL SOCIO-ECONOMIC PROFILE**

INDIATOR	PROVINCIAL LEVEL – NORTHERN CAPE	LOCAL LEVEL - JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY (JTGD)	LOCAL LEVEL -JOE MOROLONG LOCAL MUNICIPALITY (JMLM)
Population	1 145 861 million	224 797 people with majority of the population residing in the JMLM area (242 264 Census 2016)	89 531 people (54 201- Census 2016)
Economic activity	According to information supplied by the SA Reserve Bank (SARB), the most dominant sector contributing towards the provincial GDP was the mining sector.		
Mining contribution towards GDP(2016 SARB)	39.2%	72%	43.2%
Unemployment rate	18.1%	29.7%	38.6%

INDIACTOR	PROVINCIAL LEVEL – NORTHERN CAPE	LOCAL LEVEL - JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY (JTGDM)	LOCAL LEVEL -JOE MOROLONG LOCAL MUNICIPALITY (JMLM)
	Youth – 41.5%	Youth – 37.2%	Youth – 49.5%
Employment sector	According to StatsSA (2016), the largest employment sector was community, social and personal services (37.9%), followed wholesale and trade (13.3%) and agriculture (11.9%). Mining employed 8.1%.	According to StatsSA (2016), the largest employment sector was community, social and personal services (31.7%), followed by mining (30.0%) and wholesale and trade (13.0%).	According to StatsSA (2016), the largest employment sector was community, social and personal services (32.6%), followed by wholesale and trade (17.1%) and then mining (16.7%).
Education	4% of adult population have a tertiary qualification. 8% of the adult population have had no schooling. 80% of the population has some form of schooling.	4% of adult population have a tertiary qualification. 9% of the adult population have had no schooling. 77% of the population has some form of schooling.	2% of adult population have a tertiary qualification. 13% of the adult population have had no schooling. 72% of the population has some form of schooling.
Basic Services	78% of households have access to piped water inside dwellings or yards and 20% have access to piped water outside a yard and 3% have no access to piped water. Approximately 57% has access to flushing toilets 78% and 85% has access to electricity for cooking and lighting respectively.	41% have access to piped water inside dwellings or yard and 56% have access to a water point outside of their yards' 4% has no access to water. 73% and 87% has access to electricity for cooking and lighting respectively.	16% of households have access to piped water inside dwellings or yards and 77 % have access to a water point outside of their yards' 8% has no access to water. 53% and 82% has access to electricity for cooking and lighting respectively.
Housing	Northern Cape Province consists of approximately 85% formal housing and 13% informal housing. <sup>1)</sup>	JTGDMD consists of approximately 88% formal housing and 11% informal housing. <sup>1)</sup>	JMLM consists of approximately 94% formal housing and 2% informal housing. <sup>1)</sup>

The mining industry dominates the local economy in the John Taolo Gaetsewe District and Joe Morolong Local Municipalities. High levels of unemployment and low levels of education presents a significant challenge to the region and in particular the JMLM.

Over the past few years the towns of Kathu, Kuruman and Hotazel have observed significant growth as a direct result of the mining operations in the district. As the mines developed, a need to provide accommodation as well as services for employees grew. Hotazel is a municipal township with private development and is mainly owned by Hotazel Manganese Mining Company (Pty) Ltd. Black Rock is a mining town owned by Assmang. Kathu, Kuruman and Deben are also municipal towns meant to accommodate the expansion of the mining sector in the region.

According to the 2012-2017 JMLM integrated Development Plan, other challenges within the local municipality include the following:

- few employment opportunities;
- persistence of social ills such as poverty, crime and HIV/AIDS;
- lack of maintenance of infrastructure;



- weak transport infrastructure and long commuting distances; and
- limited range of products and services being offered.

Some of these aspects may present Khwara with opportunities to contribute towards socio-economic development in the region. These opportunities should typically be addressed in consultation with the relevant authorities as part of the mine's Social and Labour Plan (SLP) negotiations.

The following projects have been identified and approved by the DMR for the Lehating Mining operation:

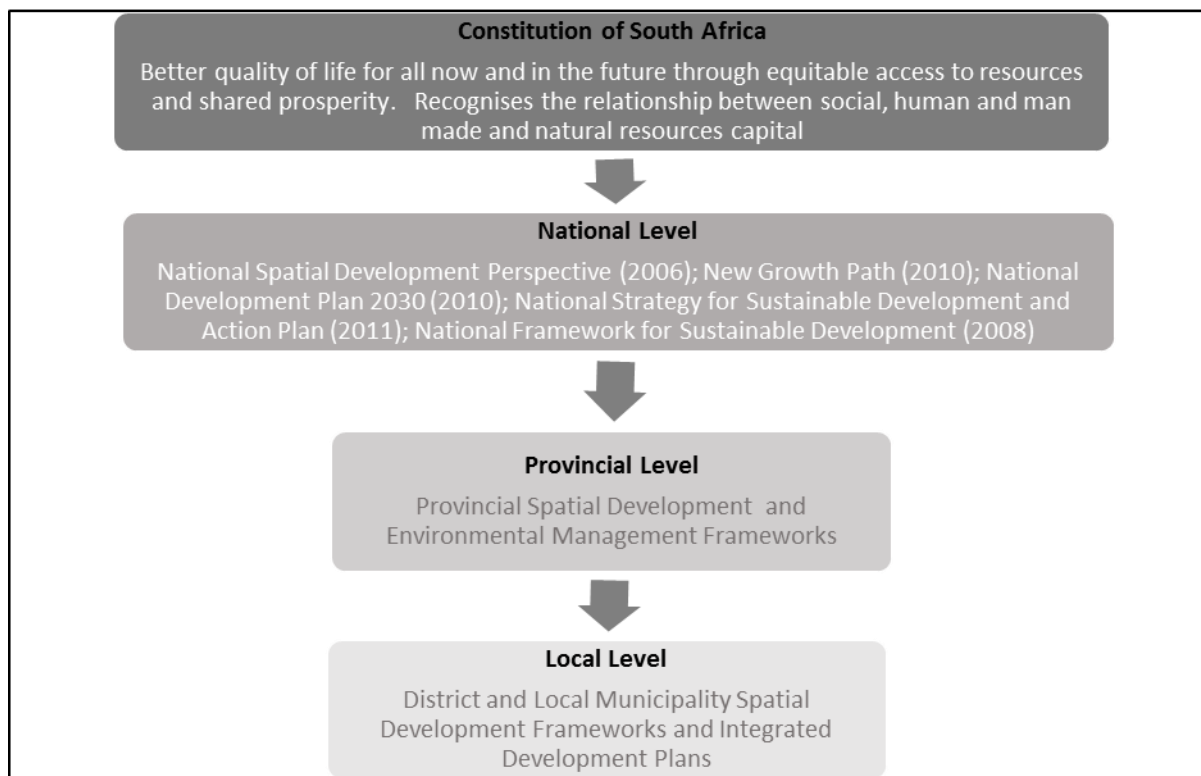
- assist the Joe Morolong local municipality in delivering on water infrastructure development where it is mostly needed;
- assist the Joe Morolong local municipality in conjunction with the project management expertise of Kumba mining to manage an early childhood development centre. Tshipi will operate as a co-funder to the project;
- assist Kumba mining in the funding of the 9 mobile clinics delivering primary health care in the Joe Morolong area;
- assist in the continued operation of the Ga-Segonyana Business Development Centre; and
- assist these schools with appropriate building development at the schools.

## **7 NATIONAL, PROVINCIAL AND LOCAL CONSIDERATIONS**

South Africa faces the challenge of simultaneously meeting the following two imperatives:

- developing the economy to meet the needs of all South Africans; and
- ensuring that the productivity and viability of the underlying ecosystems and ecosystem services are maintained at healthy levels over time.

Essentially, these imperatives are embedded in the concept of sustainable development, which is commonly defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Several national, provincial and local policies, strategies and plans have been developed in view of sustainable development in South Africa, of which the most pertinent ones are outlined in Figure 1 and discussed in the sections below.



**FIGURE 1: NATIONAL, PROVINCIAL AND LOCAL CONSIDERATIONS**

## 7.1 NATIONAL POLICIES AND STRATEGIES

The Constitution guarantees South African citizens a better quality of life for all now and in the future through equitable access to resources and shared prosperity and recognises the relationship between social, human and man-made and natural resources capital.

### 7.1.1 National Strategy for Sustainable Development and Action Plan (2011)

The Strategy for Sustainable Development and Action Plan (NSSD1) is a proactive strategy that regards sustainable development as a long-term commitment, which combines environmental protection, social equity and economic efficiency with the vision and values of the country. It is a milestone in an ongoing process of developing support, and initiating and up-scaling actions to achieve sustainable development in South Africa (DEA, 2011) and has outlined the following strategic objectives:

- enhance systems for integrated planning and implementation;
- sustain ecosystems and use natural resources efficiently;
- move towards a green economy;
- build sustainable communities; and

- respond effectively to climate change.

#### 7.1.2 National Development Plan 2030 (2010)

The national Development Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and reduction of inequality by 2030. The core elements of a decent standard of living identified in the plan are:

- housing, water, electricity and sanitation;
- safe and reliable public transport;
- quality education and skills development;
- safety and security;
- quality health care;
- social protection;
- employment;
- recreation and leisure;
- clean environment; and
- adequate nutrition.

#### 7.1.3 New Growth Path (2010)

South Africa has embarked on a new economic growth path in a bid to create 5million jobs and reduce unemployment from 25% to 15% over ten (10) years. The plan aims to address unemployment, inequality and poverty by unlocking employment opportunities in South Africa's private sector and identifies five priority areas (green energy, agriculture, mining, manufacturing and tourism) as part of the programme to create jobs

#### 7.1.4 National Framework for Sustainable Development (2008)

The purpose of the National Framework on Sustainable Development is to enunciate South Africa's national vision for sustainable development and indicate strategic interventions to re-orientate South Africa's development path in a more sustainable direction. It proposes a national vision, principles and areas for strategic intervention that will enable and guide the development of the national strategy and action plan.

The national framework for sustainable development seeks to build on existing programmes and strategies that have emerged in the first 14 years of democracy. It aims to identify key, short, medium and long-term challenges in our sustainable development efforts, sets the framework for a common understanding and vision of sustainable development; and defines strategic focus areas for intervention (DEAT, 2008).

#### 7.1.5 National Spatial Development Perspective (2006)

The NSDP 2006 provides a framework for a focused intervention by the State in equitable and sustainable development. It represents a key instrument in the State's drive towards ensuring greater economic growth, buoyant and sustained job creation and the eradication of poverty. It provides:

- a set of principles and mechanisms for guiding infrastructure investment and development decisions;
- a description of the spatial manifestations of the main social, economic and environmental trends that should form the basis for a shared understanding of the national space economy; and
- an interpretation of the spatial realities and the implications for government intervention.

## 7.2 MINING LEGISLATION

Mining development in the past has characteristically been synonymous with a disregard for its social impacts and affected communities. In many instances, mining companies have invested huge amounts of capital for mining development and openly stated that they are contributing to socio-economic development at a grass roots level in mine-affected communities. In reality, however, communities in the developing world have usually been completely bypassed by any development benefits from the project and are often left in a marginalised state, in which they are far worse off than before the mine opened.

Recent legislation in South Africa, such as the Broad Based Socio-Economic Empowerment Charter (BBSEEC) for the Mining Industry and the Mineral and Petroleum Resources Development Act (MPRDA) have confirmed the requirement for mining companies to assess the social impacts of their activities from start to closure, and beyond. Unless a mining operation has considered the social impact and documented it, the Department of Minerals and Energy (DME) will not issue a mining right to the applicant (MPRDA Regulations, 2002). Mining companies also have to compile and

implement a Social and Labour Plan (SLP) to promote socio-economic development in their affected communities and to prevent or reduce negative social impacts.

### **7.3 CONCLUSION**

Therefore, although the growth of the South African economy is of strategic importance, consideration should be given to social and natural resources considering proposed developments. In view of the concept of sustainability the proposed project will have to contribute towards achieving sustainable development whilst contributing towards achieving these higher level objectives.

## **8 ECONOMIC INDICATORS**

Various direct and indirect factors may influence the macro and micro economic environment because of the current land use as well as proposed development activities. The extent to which these factors are influenced, will depend on the nature and scale of current and proposed land use activities. It is therefore important to understand and assess the economic footprint of the proposed development in comparison to the alternative land use. Factors, which need to be considered during an economic assessment, include various economic, social and environmental indicators, broadly illustrated in Figure 2. These factors may have a potential impact, in various degrees of significance, on the local, regional, provincial or national environment during the various phases of the project life cycle.

It is however not possible to assign an economic value to all of these aspects, in particular external factors. External factors or externalities refer to the impact (positive or negative) of economic activity associated with the proposed development that are not incurred directly by those participating in the activity, but are instead borne by society and/or future generations (Nahman et al, 2009).

Typical external factors (externalities) associated with mining developments, will include social aspects such as additional pressures on infrastructure (housing, road network) and basic services (education, health care, transport, security, municipal services) due to an influx people; increase in social ills (crime, HIV/AIDS); health related impacts as a result of environmental pollution; and the general degradation of an area. External environmental factors include pollution; cost of

environmental management and rehabilitation; increase in water demand; and the change in post closure land use potential.

The potential social and environmental impacts which may result from the proposed development will be investigated and assessed by various specialists as part of the environmental impact assessment process.

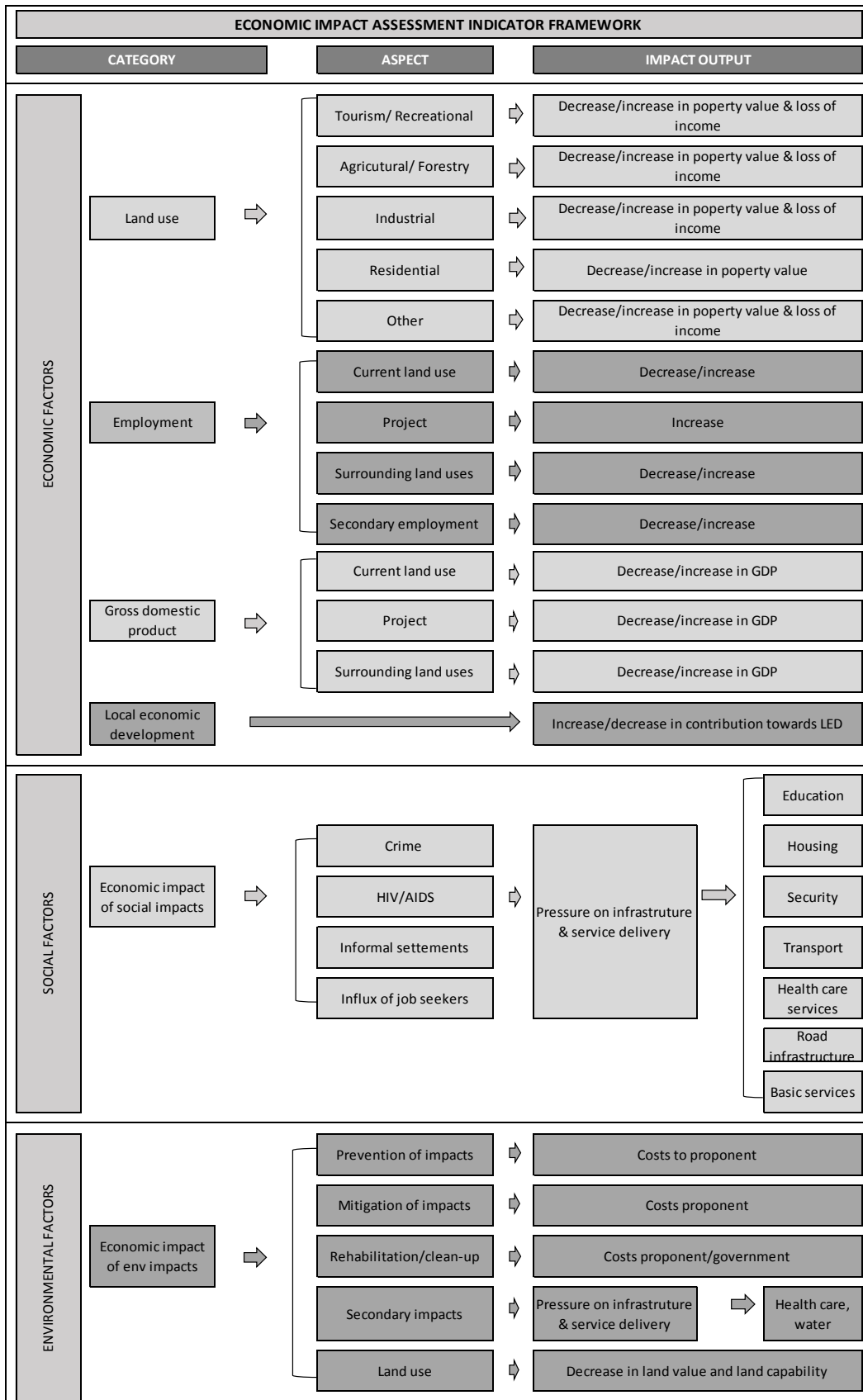


FIGURE 2: ECONOMIC IMPACT FRAMEWORK

## 9 QUANTIFICATION OF ECONOMIC BASELINE

As indicated in Section 4.1, the prospecting right was transferred from Tshipi to Khwara in January 2017. Khwara has applied to the DMR for a mining right on portions of the farms Wessels 227 and Dibiaghomo 226. Lehating holds the mining right and have an approved EMP from the DMR for manganese and iron (approved October 2013). Lehating also holds an environmental authorisation (EA), issued by the DENC in September 2014 in terms of the National Environmental Management Act, 107 of 1998 (NEMA). The construction of the Lehating Mine has not yet commenced.

Through their respective ownership structures, it was agreed to amalgamate the neighbouring Lehating and the Khwara manganese mining projects whereby the Khwara ore resources will be accessed and treated via the Lehating underground shaft and supporting infrastructure.

Construction of the Lehating project has not yet commenced. The approved Lehating mine has an expected life of mine (LOM) of approximately 15 years. Towards the end of its operational life, the Khwara project will be brought on line, to sustain production through the Lehating infrastructure. The Khwara project has an expected 10 years LOM. The amalgamated project will therefore have a combined LOM of approximately 25 years. The addition of the Khwara project will therefore sustain employment and revenue generation opportunities for a further 10 years beyond the originally anticipated decommissioning and closure of the Lehating mine and the economic impact of the Lehating mine was therefore not taken into consideration for the purposes of the Khwara project.

It is estimated that a total of 350 employment opportunities from Lehating will be maintained.

The potential economic impact of the following scenarios were therefore determined:

- pre-project land use activities, which comprises cattle grazing. This is also regarded as a feasible post closure or alternative land use activity; and
- Khwara mining project as an amalgamation to the Lehating operation.

### 9.1 POTENTIAL ECONOMIC IMPACT FROM CURRENT LAND USE ACTIVITIES

As indicated in Section 4.3.4, this area is not suited for dryland arable agriculture. The soils in the area have moderate potential for irrigation, due to the very low clay content and very low water holding capacity. Combined with the low rainfall potential of the region, the land capability of the project area is considered to be of low agricultural potential due. The optimum land-use option was



identified to be farming enterprises relating to game farms or cattle ranches, as the land is suitable for grazing. The extent of the Khwara project area is 6458ha and comprises the following farms:

- Lehating 741 is 2443ha (infrastructure, located on a portion of the farm)
- Wessels 227 is 2053ha (underground activities)
- Diaboghomo 223 is 1068ha (underground activities).

In determining the potential impact on current land use, it was assumed that current or potential activities in the farms Wessels and Diaboghomo will not be affected as those properties are associated with underground mining activities with no surface disturbance. It was furthermore assumed that the entire Lehating farm will be affected, even though the infrastructure will only be located on a portion of the farm. This is however a conservative approach which will result in an over estimation in favour of the current land use practices (cattle grazing)

#### 9.1.1 Agricultural - land value

Although the presence of mineral resources and existing operating mines in the area has resulted in the escalation of land value in the region over the past few years, a conservative approach which ignored the opportunistic over-inflation of property value was taken. Land values for barren grazing land is estimated at R3 500 per hectare (personal communication with consultant at Grainvest). For the purpose of this report Mercury used the full extent of the surface areas over all three farms, which equates to 6458ha in order to determine a pre-project land value of R 22.6 million. The entire Lehating farm has a land value of R8.5 million. To illustrate the fluctuation in property values it is worthy to note that the entire farm Wessels 227 was purchased in 2010 from ESKOM for an amount of R10.7 million by Hotazel Manganese Mine. In 2011, less than a year later, Ntsimbintle purchased it from Hotazel Manganese Mine for an amount of R1.4 million.

#### 9.1.2 Agricultural - employment

The amount of workers are also overstated at one worker per 100ha; the ratio of workers in practice are not directly related to the size of the agricultural area but rather to the amount of life stock or agricultural activity. Utilising a rate of one worker per 100ha equates to a total of 65 workers over an area of 6458ha. This will equate to a present value, over the 10 year project life, of R14.8 million based on a minimum wage of R 3001 (Department of Labour, 2017) per month.

As discussed, agricultural practices on Wessels and Dibiaghomo will be able to continue as no surface disturbance will take place on these farms. Cattle grazing agricultural activities on the farm Lehating only, will result in a net present value of R5.4 million for the 10 year period.

### 9.1.3 Agricultural - economic contribution

A property size of 6458ha with a feasible carrying capacity of 1 cattle per 10 hectare will yield approximately 650 cattle within the area in question, equating to R20.1 million (net present value) in revenue over the 10 year LOM o project life. Utilising the same assumption regarding the carrying capacity, Lehating could potentially yield a net present value revenue of R9million over the LOM.

## 9.2 POTENTIAL ECONOMIC IMPACT FROM PROPOSED MINING DEVELOPMENT

### 9.2.1 Land value

The capital investment required for the establishing of mining infrastructure was not taken into account to determine the land value post mine closure as the infrastructure is mining specific and it was assumed that it will be removed and the area completely rehabilitated during the decommission and closure phases of the mine in line with the EIA and EMP closure objectives.

Once the infrastructure has been removed and the area rehabilitated, the land will be restored back to grazing ability in line with the current land use. The current scheduled liability for the Lehating operation is R 5.6 million (year 1) with the end of LOM forecasted financial provision at R 10.3million. It is assumed that this liability will be legally transferred to Khwara.

It should however be noted that the Khwara project is not expected to have any additional impacts on land value as it will essentially be a continuation of the Lehating operation through the utilisation of its infrastructure.

### 9.2.2 Direct employment

The estimated labour cost of Khwara project was not disclosed. Mercury therefore applied a maximum rate based on the average wage earnings for the mining industry at R29 075 per month per employee as indicated in the Quarterly Employment Statistics, (StatsSA, 2016). The minimum rate was based on the minimum wage demand of AMCU of R12 500 per month.

It is estimated that a total of 350 employment opportunities from Lehating will be maintained. This will result in an employment value range of between R332.2 million as a minimum and R772.7 million as a maximum over 10 years.

### 9.2.3 Economic Impact

Over the life mine, Lehating will generate a revenue value of R11.4 billion, R7.2 billion in present value terms over a period of 10 years. The Khwara project will essentially continue the economic contribution from Lehating operations for an additional 10 years. The continued economic contribution as a result of the proposed development will have a sustained positive impact on direct, indirect and induced effects on the local, regional and national economy as it. It is furthermore envisaged that a significant financial contribution over the life of mine will be made towards the national economy.

Even when excluding the initial capital financial contribution, this project contributes significantly to the national and local economy in comparison to current as well as potential alternative land uses. The local and regional economy will benefit from the employment value created during the operational period.

#### **Direct impacts**

Direct effects are the results of the money initially spent in the study region by the business or organisation being studied. This includes money spent to pay for salaries, supplies, raw materials, and operating expenses.

#### **Indirect effects**

The direct effects from the initial and operational spending will create additional activity within the local and regional economy, as businesses benefiting directly from the proposed development will subsequently increase spending at other local businesses (indirect effect) as well as hiring additional staff members.

#### **Induced Effects**

Induced effects are the results of increased personal income a result of the proposed project, including indirect effects. Businesses experiencing increased revenue from the direct and indirect

effects will subsequently increase payroll expenditures (by hiring more employees, increasing payroll hours, raising salaries, etc.). Households will in turn, increase spending at local businesses. The induced effect is therefore a measure of this increase in household-to-business activity.

#### 9.2.4 Contribution towards socio-economic development

In addition to the direct and indirect economic impacts discussed above, the mine through its corporate social investments and social and labour plan, contributes towards the local economic development in the area. The operation of the proposed mine has following positive socio-economic benefits to its employees and surrounding communities:

- development of skills through its skills development plan;
- learnership programs to provide learners with an occupational qualification; and
- investment in infrastructure development through local economic development and integrated development programmes.

## 10 ECONOMIC IMPACT ASSESSMENT

### 10.1 IMPACT ASSESSMENT METHODOLOGY

The impact assessment methodology was prescribed by SLR and is based on the Hacking method of determination of significance of impacts as tabulated in Table 4 below and complies with the method provided in the EIA guideline document. . Part A provides the approach for determining impact consequence (combining severity / nature, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D. The unmitigated scenario is considered for each impact.

**TABLE 4: CRITERIA FOR ASSESSING IMPACTS (PROVIDED BY SLR)**

PART A: DEFINITION AND CRITERIA		
Definition of SIGNIFICANCE	Significance = consequence x probability	
Definition of CONSEQUENCE	Consequence is a function of severity / nature, spatial extent and duration	
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreplaceable loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.

	<b>M+</b>	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	<b>H+</b>	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
<b>Criteria for ranking the DURATION of impacts</b>	<b>L</b>	Quickly reversible. Less than the project life. Short term
	<b>M</b>	Reversible over time. Life of the project. Medium term
	<b>H</b>	Permanent. Beyond closure. Long term.
<b>Criteria for ranking the SPATIAL SCALE/ EXTENT of impacts</b>	<b>L</b>	Localised - Within the site boundary.
	<b>M</b>	Fairly widespread – Beyond the site boundary. Local
	<b>H</b>	Widespread – Far beyond site boundary. Regional/ national

**PART B: DETERMINING CONSEQUENCE****SEVERITY / NATURE = L**

<b>DURATION</b>	Long term	<b>H</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>
	Medium term	<b>M</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>
	Short term	<b>L</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>

**SEVERITY / NATURE = M**

<b>DURATION</b>	Long term	<b>H</b>	<b>Medium</b>	<b>High</b>	<b>High</b>
	Medium term	<b>M</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
	Short term	<b>L</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>

**SEVERITY / NATURE = H**

<b>DURATION</b>	Long term	<b>H</b>	<b>High</b>	<b>High</b>	<b>High</b>
	Medium term	<b>M</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
	Short term	<b>L</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>

L

M

H

**SPATIAL SCALE / EXTENT****PART C: DETERMINING SIGNIFICANCE**

<b>PROBABILITY (of exposure to impacts)</b>	Definite/ Continuous	<b>H</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
	Possible/ frequent	<b>M</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
	Unlikely/ seldom	<b>L</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>

L

M

H

**CONSEQUENCE****PART D: INTERPRETATION OF SIGNIFICANCE**

<b>Significance</b>	<b>Decision guideline</b>
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

\*H = high, M= medium and L= low and + denotes a positive impact.

**10.2 ECONOMIC IMPACT ASSESSMENT**

The assessment of the economic indicators, as outlined in Table 5 below, are discussed in more detail in Sections 9.1 and 9.2. It is important to once again highlight the fact that the Khwara project will utilise the approved Lehating Mine surface infrastructure to access the underground resources and therefore consideration was given to the potential impacts the Lehating Mine may have in order to assess the potential impact associated with the Khwara project.

**TABLE 5: ECONOMIC IMPACT ASSESSMENT ANALYSIS**

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
Land value	<p>The extent of the Khwara project area is 6458ha and comprises the following farms:</p> <ul style="list-style-type: none"> <li>Lehating 741 is 2443ha (infrastructure, located on a portion of the farm)</li> <li>Wessels 227 is 2053ha (underground activities)</li> <li>Diaboghomo 223 is 1068ha (underground activities).</li> </ul> <p>Assuming no mining activities have been established, the current pre-project land value is estimated at R22.6 million for all three farms, with the Lehating farm estimated at R8.5million.</p> <p>It should however be noted that the Khwara project is not expected to have any additional impacts on land value as it will essentially be a continuation of the Lehating operation through the utilisation of its infrastructure.</p>	Operational Decommissioning and Closure	No impact on land value anticipated as a result of the Khwara operation											
Employment	<p>The proposed Khwara project will sustain the 350 Lehating mining job opportunities and associated secondary employment opportunities within the local and regional area for a further 10 years. This has the potential to generate an employment value of between R332.2 and R772.7 million over the 10 years of LOM.</p> <p>In comparison, agricultural land use potential within the footprint of the three farms have the potential to employ in</p>	Operational Decommissioning and closure	L+	M	M	L	L	L+	M+	M	M	M	M	M+

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
	<p>the order of 65 people. This will equate to a present value of R14.83 million over the 10 year Khwara life of mine.</p> <p>Agricultural practices on the farms Wessels and Dibiaghomo will be able to continue despite the underground mining activities as no surface disturbance will take place on these farms. Potential losses in employment linked to the agricultural activities on the Lehating farm, will equate to a potential loss of in employment value of R5.4 million for the 10 year period.</p> <p>From a local and regional perspective, the Khwara operations will contribute towards sustaining much needed employment opportunities, resulting in a positive impact, which could be further enhanced with mitigation measures. Recruitment efforts to focus on regional and local sources.</p> <p>Not proceeding with the project will result in the premature loss of 350 employment opportunities once operations of the Lehating Mine ceases.</p> <p>It should however be noted that once mining activity at Khwara stops and the area has been restored, employment opportunities will be limited to that associated with grazing</p>													

ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
	based agricultural activities and some after care. It is therefore important that sustainable business opportunities and skills outside of the mining environment are identified and developed as part of the Khwara mitigation measures.													
Impact on economy	<p>The Khwara project has the potential to sustain the cash injection to the local, regional and national economy it will receive from the duration of the Lehating mine. An additional 10 years will result in a R7.2 billion operational revenue.</p> <p>In comparison, the property size of 6458ha with a feasible carrying capacity of 1 cattle per 10 hectare will yield approximately 650 cattle within the area in question, equating to R20.1 million (net present value) in revenue over the 10 year LOM of project life. Utilising the same assumption regarding the carrying capacity, Lehating could potentially yield a net present value revenue of R9 million over the 10 year LOM, which is insignificant in comparison to the R16.4 billion revenue generated by the mine over the same period.</p> <p>Without mitigation, the local and regional economy may not fully benefit from the mine. With mitigation through local economic development and social and labour plans, it will be possible to enhance the contribution the mine will have on a local and regional economic scale. With mitigation some initiatives will be able to be sustained post closure.</p>	Operational Decommissioning and closure	L+	M	M	L	L	L+	H+	H	M	H	M	H+
Socio-economic	The proposed development is expected to create both positive and negative impacts. From a socio-economic perspective, the	Operational Decommissioning	M	M	M	M	M	M	M+	M	M	M	M	M+



ASPECT	POTENTIAL IMPACT	PROJECT PHASE	BEFORE MITIGATION						AFTER MITIGATION					
			SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE
development	<p>positive effects, in terms of export earnings, economic development, job creation, household income and government revenue that could be derived are deemed to outweigh the negative impacts that could ensue.</p> <p>The mine will be associated with a number of other negative effects that are more challenging to quantify and to offset. These are associated with the sense of place, loss of family ties, crime situation and pressure on socio-economic infrastructure.</p> <p>Post closure, agricultural activities will have a much smaller socio-economic footprint than mining.</p>	and closure												

## 11 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations apply to the economic impact assessment:

- the information supplied in relation to employment opportunities, income generation, life of mine, etc. by the client is an accurate reflection of the activities during operational and closure phases of the proposed project;
- revenue figures used in the calculations received from the client were assumed to be constant over the 10 year LOM period;
- a discount factor of 12% as advised by the client was used to calculate the net present value calculations;
- information which were used in some of the agricultural calculations were sourced from third parties. Errors with this information could possible effect the results of the calculations and therefore the assessment. It should be noted that the best potential calf ratios and highest potential employment opportunities were assumed;
- land values are based on average land values in the region, however the true value of the land is determined by a range of factors and could therefore most likely be higher or lower than the value used in this report.;
- a maximum rate based on the average wage earnings for the mining industry at R29 075 per month per employee as indicated in the Quarterly Employment Statistics, (StatsSA, 2016) were applied; and
- a minimum rate was based on the minimum wage demand of AMCU of R12 500 per month.

## 12 MITIGATION MEASURES

Khwara will implement the commitments in the EMP to avoid/mitigate/manage all environmental, social and economic impacts and enhance potential positive impacts. More specifically, during all project phases, Khwara will ensure the following mitigation measure are implemented to minimise potential negative economic impacts and to optimise positive economic impact that may result from the proposed project:

- where possible, hire local people from the closest communities;
- extend its formal bursary and skills development programmes to the closest communities to increase the number of local skilled people and thereby increase the potential local employee base;
- where possible, ensure it procures local goods and services from the closest communities;

- implement a procurement mentorship programme which provides support to local businesses from the enquiry to project delivery stages;
- include the incorporation of economic considerations into its closure planning from the outset;
- closure planning considerations cover the skilling of employees for the downscaling, early closure and long term closure scenarios; and
- identify and develop sustainable business opportunities and skills, independent from the project for members of the local communities to ensure continued economic prosperity beyond the life of project.

### 13 CONCLUSION

The Khwara project will utilise the approved Lehating Mine surface infrastructure to access the underground resources. Although the proposed Khwara mining project may have potential negative impacts on land value as well as agricultural employment and economic opportunities, some of these impacts may have been realised through the establishment of the Lehating operation. The Khwara project will still extent the duration of these impacts. The positive contributions from employment and revenue generation from the project will however significantly outweigh these potential negative impacts over the 10 year life of mine.

It should however be noted that with mitigation the mining infrastructure will be removed and the area will be restored to agricultural land and the negative impacts with therefor be negated after a period.

Not proceeding with the project could potentially result in a loss in employment opportunities and revenue generation when the Lehating Mine ceases its operations. From an economic perspective, it is therefore recommended to proceed with the project

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**WERNER NEETHLING (ACMA)**

**(Author)**

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